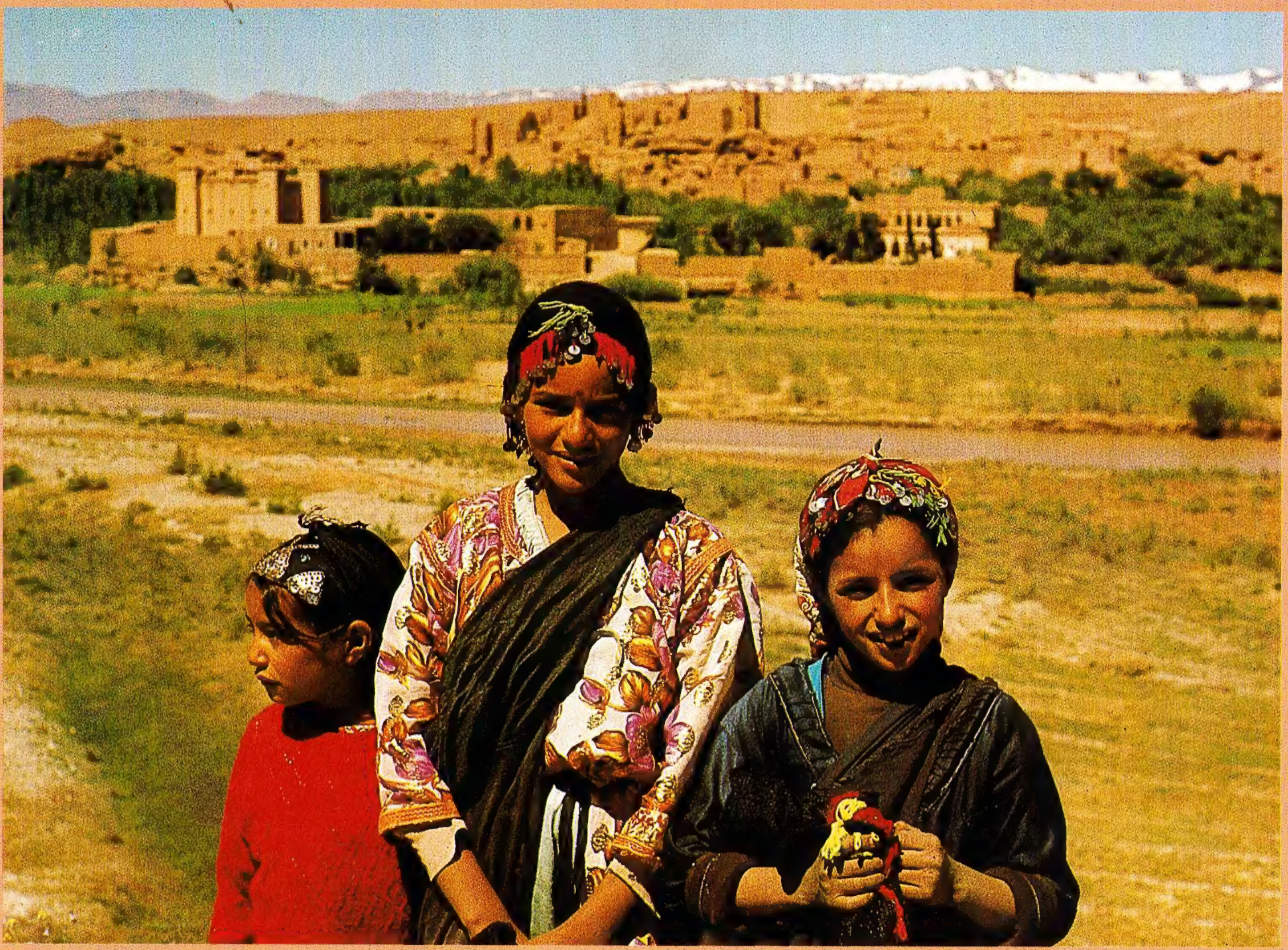
ISSN0310-222X

EARTH GARDEN



Moroccan mud: centre pages colour spread on the pise palaces along the Kasbah Trail.

• EG LIVES! • OWNER-BUILDERS REPORT ON THEIR HOMES OF STONE, TIMBER AND MUDBRICK • A SLAB COTTAGE • TIMBER FELLING • OUR SOLAR-ELECTRIC HOME • THE EG REPORT • SURVIVAL VINEYARD • FOOD FORESTS (PERMACULTURE TWO) • FRUIT WITHOUT POISONS • ACORNS • THE BIG PUMPKIN • HOME-MADE GAS • ELECTRIC GENERATORS • A COMPOST DUNNY • ACCESS • LAND LINES • RECYCLING • ENERGY SAVING • MORE!

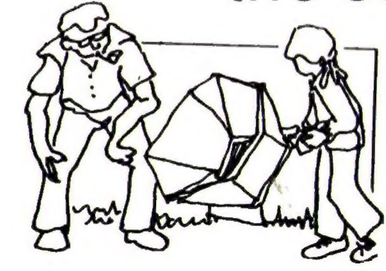
No 26
AUTUMN

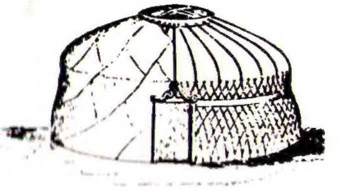
Registered for publication as a periodical: Category B.

$2.00
MARCH-MAY, 1980

Australian ACCESS

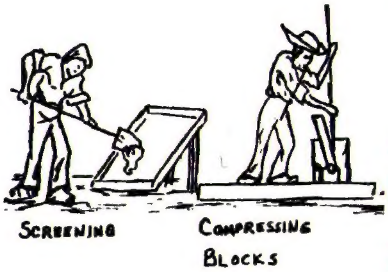
the earth garden sourcebooks





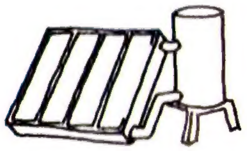
Australian Access is a guide to plans, books, groups, tools and techniques for the post-oil age in Australia, with ingenious human-scale methods for providing the essentials of life.

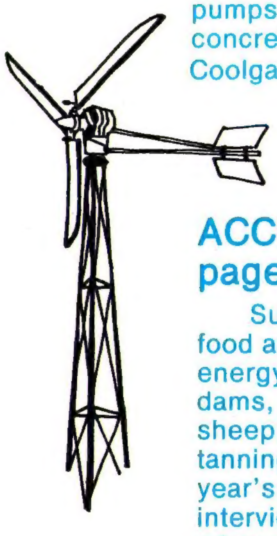
Its premise is that we Australians should live lightly on our island continent, without exploiting its natural resources. We can grow our own food, build our own homes and use small technology to provide life support, creature comforts, or to cut down on energy bills. All the sources are listed, with a key to tracking down specifics. Hundreds of instructive diagrams and illustrations.



ACCESS 1 (*Earth Garden* 22-3), 150 pages, $3.50 posted.

Subjects: Aborigines, organic food growing, permaculture, solar, wind, steam and water power, owner-building, earth housing and water supply. Includes: Top-end tucker, dilly bags, eco-farming, mineral fertilisers, biological controls, tree crops, keyline system, compost, appropriate technology, Savonius rotor, wind generators, pumps, hydraulic ram, water supply, build a concrete tank, solar cells, stills, water heaters, Coolgardie safe, earth blockpress, adzing.



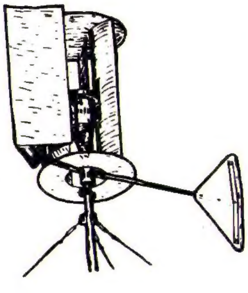


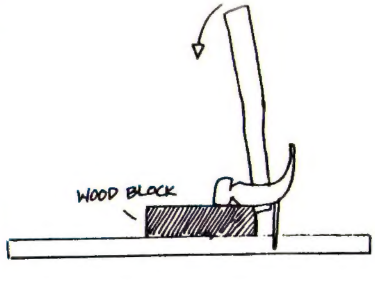
ACCESS 2 (*Earth Garden* 25), 130 pages, $3.50 posted.

Subjects: Fish farming, livestock, fencing, food and nutrition, methane gas, wind power, low energy solar homes. Includes: stocking farm dams, yabbies, fences, wombat gates, keeping sheep, pigs, goats, bees, ferrets; killing and tanning, food storage, provisioning a yacht, a year's food supply, vegetarian, vegan, fruitarian, interview with Dorothy Hall, grain grinders, mincers, Alexander technique, cheese, human wastes, Solarch house, low-energy home, passive solar heating, solar greenhouse, methane basics.

Earth Garden 25 is exceptional! The amount of energy put into the production simply astonishes me. — KEN KERN, author of The Owner-Built Home.

Whole Australian Access — the two volumes, 280 pages — $7.00 posted from Earth Garden, PO Box 378, Epping, NSW, 2121. Order form, page 62.





Earth Garden, established in 1972, presents a range of natural lifestyles. It is intended as a key to sources, practical ideas, alternatives and self-sufficiency.

It is concerned with non-polluted living and growing, the back-to-the-earth movement, surviving in the city, the bush, food and diet, and the inner changes which follow when you are in tune with nature.

Let us lead you up Earth Garden's path to the good life.

We don't have advertisements in Earth Garden. That way we're not influenced by any vested interests. Books, places and products recommended are those we think relevant.

Edited and published by Irene and Keith Vincent Smith.

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Illustrations: Elaine Norling

Printed by Maxwell Printing Co Pty Ltd, 862 Elizabeth Street, Waterloo, NSW, for the publishers, Earth Garden.

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MOROCCAN MUD

Front cover: three little maids at Skoura. Photo: Irene.
Back cover: a rustic window at Irghem. Photo: Keith.
Centre pages colour spread on the kasbah trail, starts 30.

Land Lines is a free service for **Earth Garden** *readers, who must give their full name and address as proof of their sincerity. They also have the responsibility to thoroughly check all deals.*

Please keep listings to 50 words, plus name and address.

Bush and garden enthusiasts, owner-builders, music lovers, harmonica buffs, or friendly travellers to the Clare wine valley, South Australia are welcome to visit Paul & Pauline Nicholas and family at Sevenhill. Bush camp sites available autumn-spring.

Write: Box 236, Clare, SA. 5453.

We have 150 acres in north-east Victoria near Mount Buffalo (west of Benalla and south of Wangaratta). We've just been hit with a noxious weeds bill to spray the property with 2-4-D and 2-4-5-T (yuk!) and being over 1000 miles away can't do a thing.

We were hoping to sell for $200 per acre, but now will accept a good offer from EG type peope who won't want to rape our beautiful bush. There is permanent water (creek, springs and two dams), two small sheds, an almost-completed stockyard, cleared and levelled homesite, some fencing. Beautiful views across to the snow, about 36 to 40 inches annual rainfall and moderate temperatures.

Peace, David and Rosemary Harvest, Hillview Road, Mt Cotton, Queensland, 4163.

WIND LINE

We have for sale a Winco 12 volt wind generator with tower, batteries and 240 volt inverter to run small appliances. It is 2½ years old and in as new order. We want $850.00 full price.

Eddie and Roslyn Hayes, Bald Hills Road, Grenfell, NSW, 2810.

I am selling my ¼ share (tenants-in-common) of 100 acres, 40 miles south of Oberon, NSW. $2500 covers cost of a share, plus hut and neglected garden. Permanent creek forms one boundary of land.

Please contact Lynette Bray, PO Taylors Arm, NSW, 2447, or phone (065) 64 2158.

land lines

FRUIT PICKERS

I require fruit pickers for my bio-dynamic orchard during February. This is not a holiday, but involves two to three months work.

Farrie Greenwood, Merrigum, Victoria, 3618. Phone: (058) 55 2406.

Bob's fruit trees nursery and farm is for sale! 35 acres on the Alstonville Plateau, 20km from Lismore and 19km from Ballina and the coast, all sealed roads. My farm comprises a nursery of about 4000 fruit trees per annum, mainly avocado and custard apples. Orchard of about 200 mature bearing fruit trees: avocado, macadamia, custard apple, kiwi fruit, coffee, citrus, etc.

Wood lots of 2000 eight and nine-year-old slash pine, plus pasture divided into three paddocks with sheep and goat fencing. Plant includes cemented nursery, hothouse, soil mixers, tractors and rotary hoe. Electric irrigation system on an excellent creek, three bedroom weatherboard house with garden surrounded by rainforest trees.

Would prefer to sell on a WIWO basis with stock (nursery, sheep, goats and cattle) included. This farm is not only geared towards self-sufficiency, but also yields a substantial income. The price would be quite a bit more than a suburban house, but we think it's worth it. We are moving to Tasmania.

Contact Bob Magnus, Wollongbar, NSW, 2480.

Presently we own a 626 acre farm at Jackey's Marsh, 16 miles from Deloraine, Tasmania and are forced to sell because of a commitment to teach four months out every year in Colorado, USA. There are seven titles, which may be sold separately which we have been encouraged to do by our neighbours rather than sell the whole as a commercial farm.

The blocks work out like this: 48 acres with restored farmhouse, 2 acres fenced orchard, garden, large machinery shed, spring water, $32,000; 49 acres hilltop, $12,500; 50 acres bordering mountain creek, $12,500; 60 acres including pasture and woodlands, $13,000; 76 acres woods next to creek, $10,000; 145 acres on top of hill, 40 cleared with 50 foot dam, $20,000 and 197 acres mostly pasture with wooded hillside, two dams and fencing.

For details, contact Bob & Deborah Lawlor, Jackey's Marsh, c/- P.O. Meander, Tasmania 7304. Phone (003) 69 5185.

My partner and I have in mind to sell this 5½ acre property with home which has septic, ceiling fan, air-conditioning, walk-round verandah etc. and similar separate dwelling. Two acres may be subdivided. Altitude is 1100 ft. above sea level, no near neighbours.

Margot Innes, Sandy Creek Road, Dalrymple Shire, via Charters Towers, Qld, 4820.

Post Office and store situated in a small Mallee township with organic vegetable garden and above-ground swimming pool. Nice income from PO and telephone exchange, which is scheduled to go automatic in 1981-2, small income from shop and petrol bowser, large garage with pit.

Comfortable home with large rooms, solar hot water system, electricity, renovations not quite completed, but all materials here, Mains water rainwater for drinking. Price is freehold and includes all stock except petrol, which will be at ruling wholesale price at settlement. All for $29,750. Phone Bill and Brenda Cumber on Sherlock 5, or write to us at PO Sherlock, South Austraia, 5301.

We at Amateur's Green wish to share our home, family and 20 acres with an independent young woman, with or without a young child. We bought out 20 acres here in Nanango, Queensland, three years ago. For two years we struggled to start a fruit tree nursery, with lots of failures and heart-aches, then we had the good fortune to strike a bore with plenty of good water. We are now able to grow a large amount of our needs. We make our own bread, beer, wine and grow everything organically.

Maayken and Marirn Frary, Amateurs Green, PO Box 18, Nanango, Qld, 4315.

SURVIVAL VINEYARD

BY GIL WAHLQUIST

After writing an article on natural methods of grape growing in *Earth Garden** some years ago I was asked a lot of questions which I could not answer.

These questions were from people who wanted to grow grapes, not on a commercial scale, but on a small scale, for themselves and their families. Commercial technology is unsuitable for the person with a small property and few resources.

The immense expenditure required for a conventional tractor and tools, together with the wasteful land use, is quite unsuitable for the non-commercial person.

Yet there had to be an answer somewhere. At Botobolar we believe in access, the access of people to the land, to growing, to share the joy of growing, to experience the intimate relationship between man and vine which is as old as life itself.

We should all grow grapes, whether to eat them fresh, to preserve as juice or to ferment as the ultimate gift, natural satisfying wine.

Three years ago at Botobolar, near the commercial vineyard we planted a small patch, 10 metres by 20 metres, which has developed into the answer which we have been seeking — the survival vineyard.

It combines grapevines, herbs, fruits, some vegetables, in a technology which can be worked in the initial stages by a small tiller or hoe and later completely by hand.

The production from this small area, if devoted completely to wine, could yield 600 bottles per year. Our survival vineyard has table grapes as a part of its plantings and those caring to adapt the system can alter the mix to suit their needs.

We have also experimented with varieties, avoiding the usual cliches and moving to exciting new varieties developed by Alan Antcliff of the CSIRO for Australian conditions. Their growth is phenomenal. We are also trying varieties from northern Italy. In wine-making the intention is to produce wines which can be drunk young and fresh. The grapes of autumn become the refreshments of summer in the same year.

How are the grapes grown? The commercial grape-grower makes very poor use of both his soil and of the sunshine which falls upon it. Commercial vine rows are 3.4 metres apart and the area between is remorselessly cultivated with the eventual destruction of soil balance.

We laid out our rows 1.8 m apart after the pattern of many European vineyards. Instead of the vines being 1.85 m or 2 m apart in the rows as they are in conventional Australian vineyards, we planted ours 1.2 m apart. We are thus providing more vines per acre and a greater coverage of the ground per acre.

We kept the vineyard clean for the first season, using a small Howard Terrier rotary hoe and a hand hoe to keep competing grasses away.

The vines grew well and were pruned back to two buds in the winter. When the vines shot in spring the vineyard was cleaned again. This time rotted hay was spread as a mulch around the vines and hyssop and marigolds were planted as companions.

Vincie Wahlquist tending the survival vineyard. Note straw mulch and hyssop plants.

The vines grew splendidly and we found that the small area was easy to manage. It took only an hour or two a week to pinch our buds and to remove the few opportunity grasses which came up through the mulch. The soil remained moist and rich in earthworms.

Some of the vine cuttings did not take — remember that the area is planted with comparatively rare vines recently imported by the CSIRO and we started in some cases with tiny cuttings of unproved varieties — but it was no tragedy. When one vine was missed, it was a simple matter for the adjoining vines to fill the space. We trellised with posts which had rotted out in our commercial vineyard. The height of the wire is about one metre. The vineyard is on the highest part of the property and we expect good air drainage and few frost problems. Our commercial vineyard down the slope is mostly trellised at 1.8 m.

Some of the varieties did not take at all in that first year. Their spaces have been filled with kiwi fruit and climbing beans. If we treated the little vineyard as a complete unit we would be looking at raspberries, youngberries and other cane fruits.

The vineyard meets our requirement of being an efficient user of solar energy with its close planting.

Moisture is conserved by the mulch of straw. Not only that, root growth is encouraged by the coolness of the ground. Cultivation is free, by courtesy of the earthworms, who aerate the soil and carry nutrients down to the root zone. Companion plants will, we hope, enable an eco-system to become established in which a balanced community of insects will prevent grapevine pests from gaining more than their share.

We are hoping that in the mulched situation, the fungus mycorrhiza will establish, enabling the plants to become healthier. Mycorrhiza is a fungus which establishes itself alongside the root hairs of grapevines forming a partnership which enables the plant to make better use of nutrients in the soil. Sir Albert Howard refers to this process in his work *An Agricultural Testament,* where we first encountered it.

Instead of endless cultivation, we can spend our time in the vineyard in training and tending the vines, a most rewarding activity.

An hour before breakfast in this vineyard is the perfect and relaxing start to any day.

The vines have responded with magnificent growth. They filled the wires in their second year — a process which took three and four and five years in our commercial vineyard. This season they carry their first crop — vigorous clusters of young green berries, which will mature in the autumn. We look forward to tasting these new and exciting fruits. A couple of friends who are skilled amateur winemakers will make some of them into wine and we await the shared discovery of new and unknown wines.

We will plant more herbs. The sage and pennyroyal which have proved themselves in trials under other vines will be propagated into the survival vineyard.

We have already had a delicious crop of fresh beans. Kindly farmers have given us stocks of spoiled hay which we will spread when the present layer has rotted away.

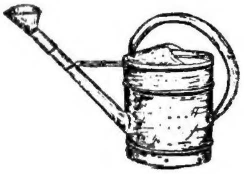
The future looks good for our little vineyard. Already it has given us a lot of pleasure and we hope that it will provide inspiration and ideas for others who want to grow their own grapes without pesticides and without expensive energy-consuming machinery.

The grape varieties planted in the survival patch are — Tullillah, Goyura, Tarrango, MG 13-82 (all Australian varieties bred by Alan Antcliff); Barbera, Grignolino, Corbean, Chasselas 307 - A, Ughetta, Tannat, Alvarelhao, Lambrusco, Fresia and Marzemina. For further reading: *Some Wine Grape Varieties for Australia,* A. J. Antcliff, CSIRO: *An Agricultural Testament,* Sir Albert Howard, Rodale.

This article is reprinted from ***The Botobolar Bugle,*** *the chatty bulletin and list of wines produced by Gil and Vincie Wahlquist at their Botobolar Vineyard.*

If you are interested in trying these Mudgee Crouchen, Traminer, Shiraz and Hermitage types, we suggest you send a sae for a price list to them at PO Box 212, Mudgee, NSW, 2850.

** See:* ***Grapes of Botobolar,*** *Gil Wahlquist, Earth Garden 14, pp. 8-11.*



RARE FRUIT COUNCIL OF AUSTRALIA

PO Box 707, Cairns, Qld, 4870, annual membership, $10.00.

The Rare Fruit Council of Australia is a non-profit organisation formed recently to promote the progress of tropical fruit growing.

The Council aims to introduce, propagate and distribute new species, improved varieties, mutations and clones of fruit plants, to collect and disemminate information on propagation and cultivation, run trials on rootstock and degree of cold tolerance and to make people more aware of the merits of tropical fruit.

There are plans for sales, fairs, displays, tours, lectures and television shows to promote interest in rare fruit.

(Information from Les Muller)

NIMBIN ORGANIC FIELD GROUP

Enquiries to Mary Ali, Phone: 89 9272 or Pauline Williams, Phone: 89 1484.

A group of organic growers of all ages, living within 20km of Nimbin, NSW, are meeting for informal practical field meetings instead of structured theoretical night meetings — and the idea has thrived.

There is no constitution. Group members co-operate to arrange monthly meetings 'in the field', usually from 10 am to 12 noon. Membership is established by regular attendance and a 30c levy is collected at each gathering to cover communication costs.

In meetings at members' properties, the particular land soil type, experiments, successes and failures are discussed and ideas and general knowledge exchanged. Projected field meetings for 1980 should include a feasibility study on permaculture on a limited acreage, cheese-making, local tree identification, beekeeping for 1 to 3 hives, honey extraction and rain forest study. The idea is a good one. We hope it spreads.

(Information from Pauline Williams)

FOOD FORESTS

PERMACULTURE TWO
Practical Design for Town and Country in Permanent Agriculture.
Bill Mollison.
Tagari Books, Stanley, Tasmania, 1979, 150 pages, large format paperback. Price $8 ($NZ8.50).
Available by mail (postage about $1) from Tagari Books, PO Box 96, Stanley, Tasmania, 7331.

I guess you could take a copy of *Permaculture Two* and a few packets of seeds and head out for the wilderness to make a new life. You could certainly leave your axe behind.

But when you see Bill Mollison's design for a ¼ acre suburban allotment, it's more likely that you'll prefer to stay at home. This new volume goes a long way towards the author's original idea of turning our dying cities into productive food forests.

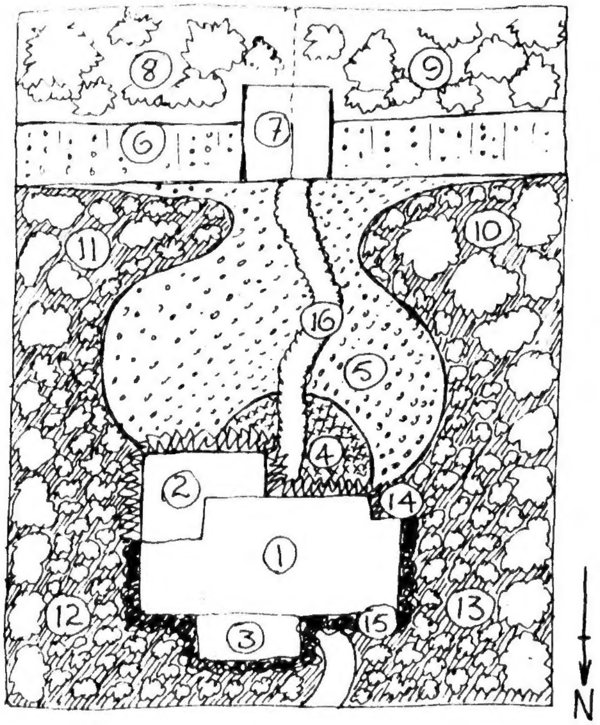
Permaculture One (Corgi Books), which Bill Mollison wrote in conjunction with David Holmgren, outlined the concept of a perennial low-tillage agriculture, using trees and plants in a system designed for self-sufficiency. See our review and Bill's talk on permaculture in *Australian Access 1* (EG22-3), pages 49 to 54.

The follow-up is bursting with practical, simple ideas, designs and strategies for persuading the earth to give us a living without the earth suffering too much in exchange. Permaculture is self-renewing.

There are valuable sections on design for arid lands, tropics, sheet mulch gardening, soil improvement, fish farming, fodder trees, orchards, permanent grains, poultry keeping (with a list of fowl forage) and dams and structures, such as earth homes which are indeed *in* the earth.

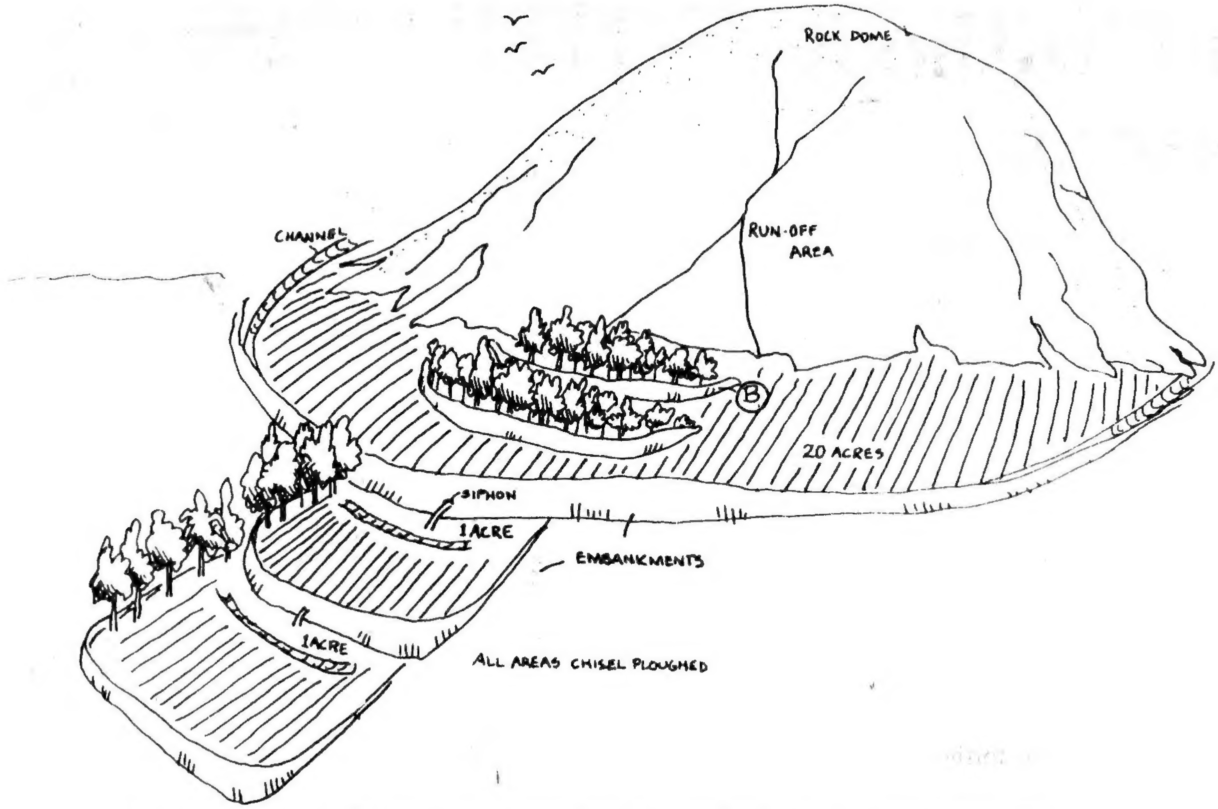
The inclusion of P. A. Yeoman's *keyline* water use planning is particularly valuable. This has inevitably found its place in the permaculture philosophy, with organic gardening and farming principles, mulching, F. H. King's *Farmers of Forty Centuries*, J. Russell Smith's *Tree Crops* and other topics which will be familiar to *Earth Garden* readers.

These melt into the idea so well that they don't come over as part of a 'grab-bag' of alternatives, but, in the author's words, as "warps of plants and wefts of animals" for the homesteader to gather into "a logical weave".



1 HOUSE: BEDROOMS TO S., LIVING ROOMS TO N.
2 SHADEHOUSE: COOL AIR SOURCE.
3 GLASSHOUSE: HOT AIR SOURCE AND HEAT PUMP.
4 KITCHEN HERB GARDEN.
5 ANNUAL GARDEN (TO 6.)
6 "CHICKEN TRACTOR" GARDEN
7 CHICKEN HEATED GLASSHOUSE.
8+9 STRAWYARDS FOR ALTERNATIVE USE, FORAGE FOREST FOR POULTRY.
10 LARGER FRUIT SPECIES (EVERGREENS TO N.)
11 AS FOR 10. SMALL FRUIT AND LARGE HERBACEOUS PERENNIALS EDGE ANNUALS.
12+13 LOW SMALL FRUIT, NUT, PRUNED TREE SPECIES, LARGER AT BOUNDARIES.
14 EVERGREEN VINES ATTACHED TO, OR TRELLISED NEAR HOUSE TO S. FOR WINTER INSULATION.
15 DECIDUOUS VINE TO N. FOR SUMMER HEAT CONTROL, GLASSHOUSE SHADE.
16 COVERED WALKWAY OR ARBOUR WITH VINE CROP, POLE BEANS.

DESIGN FOR ¼ ACRE BLOCK (PLAN).



RUN-OFF LED BY SIPHON TO SMALL CHISEL PLOUGHED FIELDS

There is a touch of tillage here. You certainly need machinery to build dams and soil chisels like the Yeomans' *Bunyip* or Geoff Wallace's *Soil Conditioner* are necessary to improve soil on grazing land or to prepare tree planting areas.

The photos of the machines at work on Geoff Wallace's property in the Kiewa Valley are rather murky, but the drawings throughout the book are clear and instructive. There are sketches of glasshouses, plant houses, sod roofs, planting layout, homesite design, solar applications, a spiral herb garden and dozens of other innovative suggestions to make a self-reliant life a rich and rewarding one.

One of the brilliant, yet simple, ideas is to site a dam at the keypoint of a sloping hill and build a homestead at the top side overlooking the valley. This has many advantages: protection from bushfire (which usually runs upslope), water supply, fish raising at the doorstep, water reflects solar heat, water runs downslope to crops, trees or pasture; you can swim, sit by the dam and enjoy the view.

I have only one nagging reservation about the grand design — the emphasis, in both books, on *exotic* plants and animals.

Unless permacultists carry out their plans only on the land which has already been cleared or raped, our native bush and a lot of its flora and fauna will disappear. And I love the bush. Maybe *Permaculture Three* will consider this problem in more depth and we will have permaculture as if *Australia* really mattered? — *Keith.*

It must be stated at the outset that I regard permanent agriculture as a valid, safe, and sustainable, complete energy system. Permaculture, as defined here, claims to be designed agriculture, so that the species, composition, array and organisation of plants and animals are the central factor. In that sense this is not a gardening book.

If there is a single claim that I could make, in order to distinguish permaculture from other systems of agriculture, with the notable exception of keyline concepts, it is that permaculture is primarily a *consciously designed* agricultural system.

People frequently ask how much land they need for self-sufficiency. The answer is, "As much as you can control". Any more and you lose self-sufficiency, let alone the ability to produce an excess. If people ask "Where do I start?" then the answer is always "At your doorstep".

First, I must state that in my opinion, based on real examples sighted, that the "dead centre" is a myth. Not only will many important vegetables and tree crops grow in deserts, but the native vegetation, where not overburnt or overgrazed, is, in itself, a great resource.

Society is in a mess; obesity in the west is balanced by famine in the Third World. Petrol is running out, and yet freeways are still being built. Against such universal insanity, the only response is to gather together a few friends and commence to build the alternative, on a philosophy of individual responsibility for community survival.

Fruit without poisons

BY PEG KINNISH

You must begin with a healthy tree. Put it in a sunny spot, see that it has good drainage and keep it healthy.

The native birds work hard in our gardens all year, eating many pest insects as well as taking nectar from the flowers. Silvereyes are dynamite on aphis, pardalotes patiently pick off scale insects and bronze cuckoos will eat even the hairy caterpillers of the vine moth.

Parrots will eat fruit and silvereyes will drill tiny holes in plums and apricots to sip the juice. Wattlebirds, being brush-tongued honeyeaters, will lap up the fruit juices exposed by the feeding of other birds — and so do my bees.

I protect our share of the fruit by pinning black plastic fishnet over it with clothes pegs, thus leaving some for the birds. English blackbirds are a nusiance, as they tear up the garden beds and the mulch to get at our valuable worms. They also eat fruit (especially the berry fruits) and are fiercely territorial, driving the native birds out of the garden. Indian mynahs and starlings, also introduced to this country, are very destructive and persistent, as anyone knows who owns a fig tree!

The main insects that plague our orchards are the codlin moth, earwigs, soldier beetles, harlequin bugs (I don't have them, thank goodness) and the pear and cherry slug.

Ring or collar rot is a fungus disease that rots the bark of the tree at ground level. Curly leaf is also caused by a fungus. Yet there is a beneficial fungus that lives in the ground and grows in association with apple tree roots and keeps the trees healthy.

It is essential to keep the ground free of grass and weeds under the trees and mulch will do this. It is the secret of 2/3 of your success with fruit growing. It also confuses the cycle for the codlin moth.

When mulching, keep the area immediately round the trunk free and open, say for 30 cm or so. From there outwards to the dripline of the outer branches, mulch deeply.

I use seaweed, any old bird or animal manure except horse manure (which may carry the tetanus germ) old hay, crushed eggshells, vegetable peelings, fallen leaves or lawn clippings (allow to wither first) in that order.

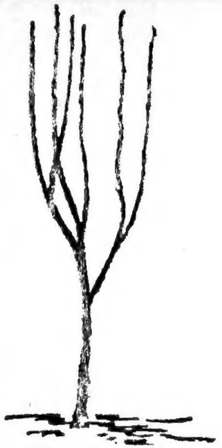
I throw a bit of washed gravel around, or wood ash, or shell grit for calcium. Spread some rock lime under stone fruit each winter.

Grow garlic and chives in your mulch, especially under stone fruit. Mine have not been affected by curly leaf since a ring of garlic has been established beneath them. Marshmallow also helps.

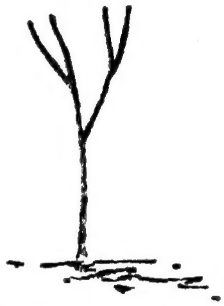
Allowings fowls to live in the orchard seems to benefit peach trees. Bantams and fowls clean up earwig. They scratch a lot, so you need old netting and rocks to hold the mulch in place. Ducks in the garden will gobble up all the snails.

PRUNING FRUIT TREES

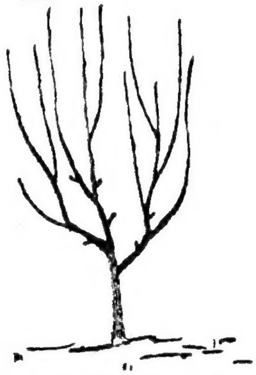
Illustrations reproduced with permission from Ray Fleming of Eric J. Fleming & Sons Pty Ltd, Monbulk, Victoria, 3793, fruit tree nursery.



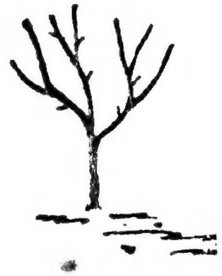
1. How your tree should look in 12 to 18 months.



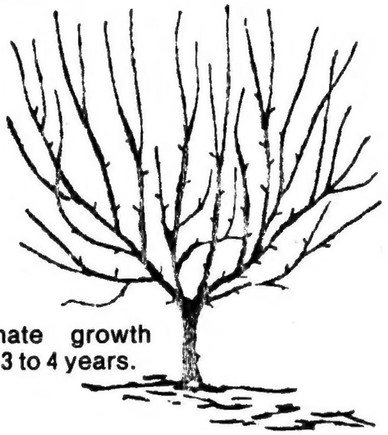
2. After pruning tree in mid-winter.



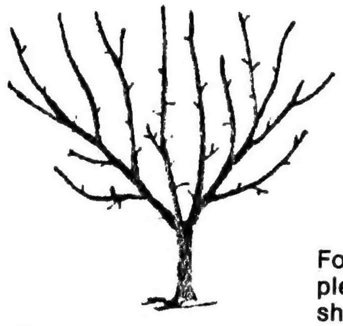
3. How your tree should look in 2 to 2½ years.



4. After pruning tree.



5. Approximate growth of tree in 3 to 4 years.



6. After pruning tree.

Follow the same principle thereafter. The tree should be pruned each year in winter.

Citrus trees benefit from an occasional watering with diluted urine. In a serious infestation of scale (black soot) or aphis, the birds may need a little help to control them. I dissolve a handful of Lux or Velvet flakes in four cups of hot water and throw it over the trees. Others use suds from the clothes washer this way. A complete kill is not my intention because I know the birds will clean up what I miss.

Add starch to soapy water. This gives better results when killing scale as it forms a coat which smothers them. I am presuming that only milk soap, or oil-based soap is being used.

My brother had trouble with woolly aphis on his apple trees. He planted garlic under them. Result: no woolly aphis. He wonders if something happens in the ground, such as the apple tree taking up something which the aphis don't like? A hard frost will kill earwigs and slaters — but it's a bit hard to organise!

If you have a fruit tree and no fruit, check for bees and pollination before you cut it out. A fruit tree is not old at seven years.

Pear slug — which also defoliates quinces and cherries — is a small, leech-like creature with a moist skin. I save up my wood ash and throw handfuls all over the leaves. it sticks to the slugs and they seem to shrivel up. I once used some old flour with similar results.

If grass grows too madly in your hay mulch, turn the hay neatly upside down on a sunny day. That slows it down.

Planting new trees? Do not plant deeper than the soil line on the new tree — so long as you leave the "graft" free of soil.

Every tree will benefit if it is grown in your garden, because it is wanted and loved and cared for correctly. In other words, give your tree plently of tender loving care. Admire it and tell it how beautiful it looks — and we should eat well soon.

Acorns for tea

By Barrie & Janet Mather

As all small people know and most adults can remember, acorns taste very bitter. It is less widely appreciated, however, that they can be made palatable by grinding them to a meal and washing them with several changes of water.

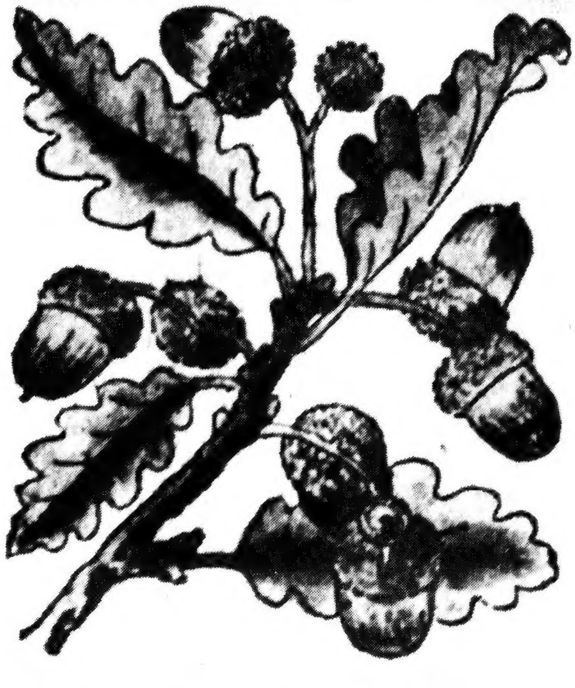
Admittedly, the acorn is not a front-line protein source (its analysis is similar to that of the sweet chestnut), but it is a forage food — which places it in an attractive price bracket — and it is easy to store. If these reasons don't stimulate you to try acorn bread this autumn, why not have a go just for the experience?

Our experiments with acorn cooking were stimulated by reading that acorn meal was a regular part of the diet of the pioneers of the American frontier, though the frontier housewives were probably using a different acorn from the one available to us. However, the following technique works with the fruit of the English oak, ***Quercus robur***.

The traditional way of grinding acorns is to place them in a wooden bowl and bash them with a club. Our household lacks these aids to gracious living and our first attempt involved a steel plate grain mill set to its finest pitch. This method is *not* recommended. The operator becomes very warm and the next batch of flour comes from the mill in a rather depressing shade of grey.

Our mill produced a meal with particles up to 1.5 mm in diameter. These appeared to be too large to allow the bitter tasting tannins to be washed out. At this stage we invoked the aid of modern technology. Shelled, coarsely-chopped acorns were mixed with water and placed in a small kitchen blender, which produced a meal with particles up to about 0.5 mm in diameter.

A large jar was half filled with meal, topped up with water and shaken vigorously. The jar was allowed to stand for from four to 12 hours, during which time the meal settled to the bottom. The water was poured off and the process repeated until the water ceased to taste bitter and the meal was palatable — six to eight cycles, depending on how long the meal was allowed to stand in each change



Acorns, from *La Clef des Champs*, by Jaques le Moyne de Morgues, 1586.

of water.

The wet acorn meal can be stored for two or three weeks in a domestic refrigerator, or indefinitely in a freezer. Alternatively, it may be dried to a rather gritty, brownish powder.

Not many cookery books feature recipes using acorn meal, but it may be included in a variety of dishes. In soups and stuffings it is filling but bland and needs something to give it flavour. The wet meal may be mixed with as much flour as it will take up, to form the basis of tasty bannocks and fritters and in cakes and biscuits it has a nutty, chocolate falvour.

Here are two recipes that we have enjoyed which you might like to try to start your experiments.

ACORN STUFFING WITH PRUNES

1½ cups fresh wholemeal breadcrumbs.
½ cup dry acorn meal
10 pitted prunes
1 rasher chopped bacon
2 tablespoons chopped parsley
sprinkle dried powdered thyme
salt and pepper to taste

Mix well, and bind with:

1 egg
1 tablespoon cooking oil
juice ½ lemon
a little water if necessary.

Bake in foil with rabbit joints.

ACORN BISCUIT ROLL

2 tablespoons butter
1 cup sugar
2 tablespoons *Golden Syrup*
2 tablespoons milk
½ tablespoon vanilla

Warm in a pan till blended, then add:

1 beaten egg.

In a bowl, mix:

1 cup dried acorn meal
1½ cups plain flour
½ teaspoon cream of tartar
1 teaspoon baking soda
pinch salt

Add dry ingredients to butter mixture, roll into small balls and bake in a slow oven on a greased slide. The biscuits may be eaten when they are cool, or they may be used to make acorn biscuit roll.

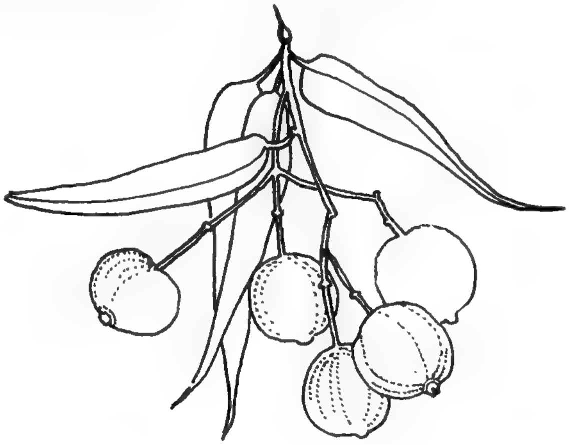
Make cylindrical cake by alternating acorn biscuits, stood on edge, with thick layers of sweetened whipped cream. Cover the outside of the cake with whipped cream. Refrigerate for 12-24 hours before serving.

We'd like to finish with a request. We've heard that some American oaks were planted in Canberra as a tribute to its architect Walter Burley Griffin. If any reader who can identify these trees would send us some of their acorns to plant we'd be happy.

Also, we would be happy to share experiences with acorn cooking with you. Write to RMB 3006, Violet Town, Victoria 3669.

REFERENCE

Foods of the Frontier, Gertrude Harris, 101 Productions, San Francisco, 1972.



QUANDONG

The CSIRO is researching the domestication of the quandong. This native "peach" has a green fruit which turns red when ripe and an edible nut — both of which could be improved by cultivation.

The quandong fruit has a tart, acid flavour and has a high vitamin C content. It was prized by Australia's Aborigines and early European settlers used it to make jellies, pies and jam.

The fruit is ripe when the stone inside rattles, or it falls from the tree. It may be eaten either raw or stewed. The flesh may also be sun-dried after removing the stone, then later reconstituted by soaking in water for a few hours.

The kernel is oily and burns with a clear light. It was used to make bracelets and necklaces and even (during World War II) to make Chinese checker pieces. The nut is usually eaten roasted.

The bark contains tannic acid, which may be used as a dye.

However, the quandong is partly a parasitic plant, obtaining some nutriment from the roots of other plants. Therefore, it must be planted somewhere near a host tree, perhaps a eucalypt.

Germination is difficult, but the quandong will probably germinate under a deciduous tree amidst the rotting leaves. Dr Mark Buttrose, of the CSIRO Division of Horticultural Research in Adelaide, South Australia, has established quandong seedlings by allowing them to parasitise the roots of kikuyu grass in pots.

The quandong occurs over most of Australia, except for Tasmania, but it is becoming rare, partly due to the effects of livestock grazing.

The big pumpkin

BY LESLEY ZOLIN

We recently ate a pumpkin. It was a large pumpkin and, as we only have a small fridge, it had to be eaten quickly.

With four people to do the eating it still took us a week to finish off that pumpkin. Mashed, boiled and baked pumpkin can get very boring for a whole week of meals, so we introduced a little more variety into our pumpkin-eating week.

For people who are used to buying their pieces of golden deliciousness (more commonly known as squash or pumpkin) in convenient chunks, the prospect of chomping through a whole year's produce, all cooked the same way, could be daunting. So what follows is a compilation of some of our favourite ways of preparing and enjoying that large, yellow, tasty and most prolific vegetable. The recipes are a mixture of ideas culled from recipe books, magazines and our own inventiveness over a number of years of pumpkin-eating. They are offered in the hope that more people will enjoy their pumpkin even more as a result of trying something different.

Most of the recipes call for mashed pumpkin, so our first meal from a freshly-cut "fruit" usually includes either baked, boiled or mashed pumpkin as a vegetable. I usually cook far more than can be used in that one meal, and leftovers get used later. For Grabbin Gullen pie, the whole pumpkin is baked, and any left-over pumpkin can, of course, be used in the other ways.

Not only the flesh of the pumpkin is edible. We have had some good meals from the vine while waiting for the fruit to set — fried pumpkin flowers are delicious, particularly with bacon. Even after the remnants have long since graced the compost-heap, roasted pumpkin seeds can make delicious munchings around the fire of an evening. Most pumpkins have lots of seeds to spare, even after you have saved samples of the best ones for next year's crop.

One point before I actually get to the recipes. If, like us, you have limited refrigerating space — or even none at all — then a large hunk of wilting pumpkin can be put in the oven for a couple of hours to cook, allowed to cool, and then used in the next couple of days. This procedure keeps the moulds at bay, lets you vary your diet between pumpkin meals and stops waste. Other alternatives would be composting or pig's fodder.

GRABBEN GULLEN PIE

A good "beginning" for a pumpkin-feast. You'll need:

1 pumpkin.

1 rabbit (the early settlers used possum).

Some onions.

Cut the pumpkin in half, scoop out the seeds and membrane, and fill the hollowed pumpkin with rabbit pieces which have been very lightly fried (with some onions if you like). Fit the two pieces together, stick some skewers in to hold them, if you would like the added security, and put the whole thing in a baking dish in a moderate oven. Cook for three or four hours, or until the rabbit is cooked and the pumpkin tender. Time will depend on the size of the pumpkin. Supposedly, this was originally cooked in the ashes of the fire.

The Grabben Gullen pie recipe came from a rather beaut book called *Two Hundred Years of Australian Cooking,* Babette Hayes (Thomas Nelson (Australia) Ltd). It includes discussions of cooking styles, ingredients, and eating habits from aborigines through first settlers to more recent migrants — and lots of useful recipes accompanied by photos that set the salivary glands going.

PUMPKIN GNOCCHI

A delicacy which Mario introduced to the family. You take:

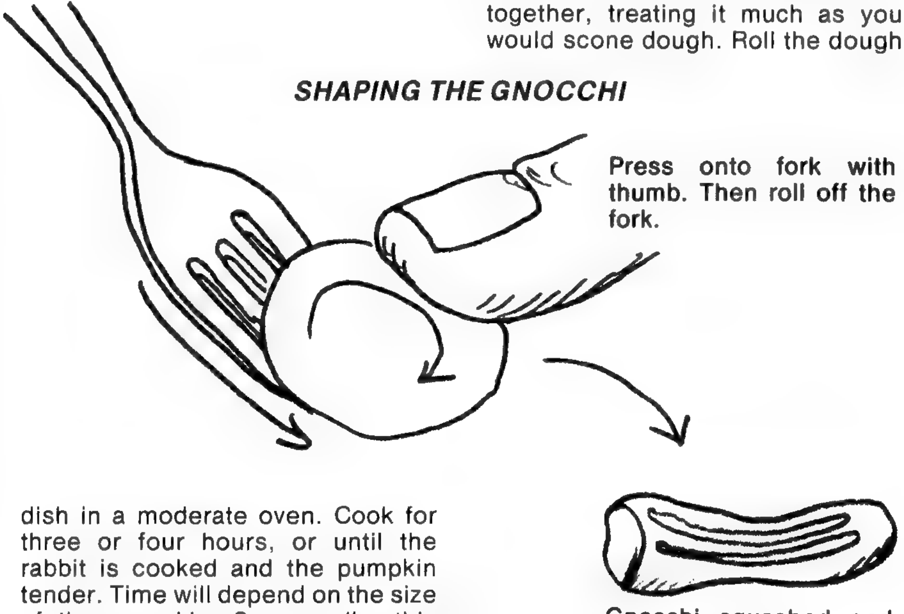
A quantity of mashed pumpkin — smooth.

An equal quantity of flour (no raising).

An egg (not really necessary, but helps to bind if you have one).

(For four people, two cups each of pumpkin and flour is about the right amount.)

Mix the flour and pumpkin together, add the egg if you are using one, and knead the lot together, treating it much as you would scone dough. Roll the dough



SHAPING THE GNOCCHI

Press onto fork with thumb. Then roll off the fork.

Gnocchi squashed and ready to cook.

out into long sausages, thick as the base of your thumb — this to be done on a well-floured table or board. Cut off pieces about ¾" long and slightly flatten with a fork. The gnocchi will double in size during cooking, so be careful not to make them too large. Flour the gnocchi well, or they will stick together before they can be cooked. Get a large pot of salted water to a good rolling boil, and add the gnocchi. Keep the water boiling all the time to prevent the pieces sticking together. They take about 20 minutes to cook, and are tested for "doneness" in the same way as spaghetti. Ideally, bite one in half to test whether it is cooked all the way through. If you prefer, cut it and look. When they're cooked, drain and serve with butter or with tomato sauce — NOT from the bottle, but homemade if possible.

PUMPKIN SOUP

There are many versions, some very complicated. This is a quick, filling meal.

Pumpkin (mashed).
Milk.
Butter.

Mash hot pumpkin until it is VERY smooth. Add about a teaspoon of butter, and enough milk (keep stirring as you do this) to bring the consistency to something like rich, unwhipped cream. Add salt and pepper to taste. You might like to try sprinkling some brown sugar on the soup just before eating it — goes very well indeed.

PUMPKIN PANCAKES

Something different for breakfast — particularly if you have some left-over pumpkin soup.

Mashed pumpkin (or soup left-overs).
Milk.
Egg.
Flour (with rising).

To some smoothly mashed pumpkin, add milk until you have the consistency of thick, unwhipped cream, then beat in an egg. Add sufficient flour until you have a fairly thick batter. Cook the batter as either pancackes or pikelets, and serve hot, spread with honey, golden syrup, or cumquat marmalade, or whatever else you fancy.

PUMPKIN FRUIT CAKE

Another good cake-tin filler — something to go with our innumerable cups of tea.

1lb pumpkin.
1 cup water.
1lb mixed fruit.
4oz butter.
1¼ cups of sugar.
1 tablespoon golden syrup.
1 teaspoon bicarbonate of soda.
2 eggs.
1 cup self-raising flour.
1 cup plain flour.
½ teaspoon salt.
1 teaspoon mixed spice.

Peel and slice pumpkin, cook in boiling salted water until tender, drain well, mash. Combine water, chopped fruit, butter, sugar, golden syrup and soda in saucepan; bring to boil. Reduce heat, simmer 10 minutes, cool. Add eggs, mashed pumpkin, sifted dry ingredients; beat well. Pour mixture into 2 greased, greased-paper-lined 10in x 3in bar tins (or your closest substitute). Bake in moderate oven one hour and 10 minutes, or until done.

PUMPKIN "FRITELLE"

A variation on an Italian recipe.

Mashed pumpkin.
Milk.
Flour (with rising).
Currants (or some other dried fruit).
An egg.
Sugar.
Cooking oil.

Make up a thick batter with all ingredients except the oil. This should be about the consistency of a "patty-cake" mixture. Heat the oil until it is just beginning to smoke, then drop teaspoonfuls of the mixture into the hot oil. Let them cook until they are golden brown, then scoop out, drain and sprinkle with sugar. Layers can be built up in a deep bowl, sprinkling each layer with the sugar. These are good eating either hot or cold.

PUMPKIN SCONES

2 cups self-raising flour.
1 cup cold mashed pumpkin.
Pinch each salt and pepper.
½ teaspoon grated lemon rind.
2 tablespoons butter.
1 egg (well beaten).

Sift flour, salt and pepper in basin, rub in butter. Stir in mashed pumpkin and lemon rind, mix to rather firm dough with egg. If pumpkin is dry, it may be necessary to add a little milk. Turn onto a floured board, roll to about ¾ inch thickness. Cut into rounds, glaze with milk, bake in a hot oven 12 to 15 minutes.

PUMPKIN PIE

Just one version of many.

1½lb pumpkin.
2 eggs.
¾ cup honey.
½ teaspoon salt.
1½ teaspoons mixed spice.
1¼ cups milk.
9in unbaked shortcrust pastry case.

Peel pumpkin, cook in boiling salted water until tender, drain well, mash. Add all remaining ingredients, beat well. Pour filling into pie case. Bake in hot oven 15 minutes, reduce heat to moderate (or move down one shelf, or let the fire die slightly) and cook a further 45 minutes or until set.

PUMPKIN FLOWERS

Flowers (male)
Batter (egg, flour).
Oil for frying.

Collect excess male flowers from the pumpkin vines, preferably in the morning. A collection can be built up over a couple of days if you have refrigerator room to keep them in. Discard all the green parts and the stamen. Make up a thinnish egg batter, dip the flowers, and fry in hot oil. Drain, sprinkle lightly with sugar, and serve as a vegetable. They go well with zucchini and/or eggplant, and have been known to raise cheers if I just happened to serve them with fried brains and bacon.

PUMPKIN SEEDS

To collect the seeds for roasting, either carefully pick out all the seeds, clean them and spread them on trays, or do it the easy way — which takes longer. Dump the seeds and the membrane they are held in in a bucket of water. After a couple of days (or a week, depending on the weather) the seeds will sink to the bottom, and the membrane will be floating on top. Scoop out the membrane, put it on the compost, then collect the seeds and dry them in the sun. To bake, spread them thinly on an oven tray and put in a medium-hot oven for about half an hour, or until they start to colour. Bite the seeds to crack the skin and eat the meat; the skin tastes like recycled cardboard, the kernel is something like peanuts.

Alternative Australia
Communities for the Future?
Peter Cock, Quartet Books, Melbourne, 1979, 292 pages, hardback, $19.95.

The failures and successes of the alternative society during the last decade in Australia — and many of its personalities — become social history in Peter Cock's *Alternative Australia.*

Peter and his wife Sandra were among the original organisers of the Moora Moora Co-operative Community at Mt Toole-be-wong near Healesville, Victoria, a community of housing clusters on 245 hectares.

This history of a very recent past is a useful tracing of the experiences of communal groups, from urban to rural, which anybody interested in alternative lifestyles should read.

Peter Cock has an impressive academic record, with a B.Comm from Melbourne University, MAs in politics and sociology at Ohio State University, USA, and a PhD in sociology from Monash University.

Peter says in the book that *Earth Garden* considered his approach to his writings as "too academic", so, to be fair, we must point out that his writing here is rather more subjective. A great deal of interest comes from his personal accounts, especially of his own progress from the city to Moora Moora, that of a person deeply involved in the search for the elusive 'better life'.

The book has been well received by reviewers and will go a long way towards getting across a better image of the new age communities to people who still believe in the stereotype hippy from the flower-power era. There is a tendency at times to rely too much on that same media as an authority or a reliable record of events and to give transient groups an importance they do not rate simply by chronicling their doings.

Peter says he went on 'the hippy trail' for several months in 1973. "In seven years, I visited more than fifty communities and twenty-five other groups, and gathered information from another thirty. These seemed to represent all types of communities that existed," he writes.

There is a tendency for the writing to get a bit too close in reporting the flounderings of young people in finding a path through life. There is some plot material for television soap operas in spots, but, after all, the shared relationships in a community, like those of any large family can sometimes be mawkish, and can't be expected to always run on an even course of peace and love.

* * *

MOORA MOORA NEWSLETTER

$3.00 for six issues posted, from PO Box 214, Healesville, Victoria, 3777. Keeps you in touch with the Moora Moora experiment in living.

* * *

INTENTIONAL RURAL COMMUNITIES

In Australia. List from Lionel Pollard, updated to Easter, 1977. Suggested donation, $1.00, from 7 Duncan Avenue, Boronia, Victoria, 3155 (See *Communities,* EG24, pages 34-5).

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NIMBIN NEWS

Weekly (mostly), published by Rainbow Info Media Centre, Cullen Street, Nimbin, NSW, 2484. Price $5.00 per quarter, posted.

Nimbin News varies in size and reproduction, but is always full of interest, especially for people around the Rainbow Region, or for people planning to move there. Has been recording the conflict over hamlet building at Bodhi Farm. Every 'new settler' region should have a newsletter like this one.

A FAR CRY

Neil Douglas spinning yarns with Abbie Heathcote.

Abbie Heathcote, Karella Publications, Kangaroo Ground, Victoria, 1979, 140 pages large paperback, $10.00 (hardback, $18.50).

If you liked *The Book of Earthly Delights* (reviewed in EG19) you will certainly enjoy its sequel, *A Far Cry.* We loved it, love Abbie and Neil, and love their new book. That must be our highest recommendation. It is.

"I intended to leave Australia and go to Europe as soon as I grew up and raised the money," writes Abbie, "and no doubt I would have done this if I had not met Neil, who introduced me to his Australia".

That's what this book is really about: Neil Douglas in search of the *real* Australia, becoming a well-rounded Australian along the way and pointing it out to all of us who can't see the bush for the skyscrapers.

Inside the covers of her well-designed book, Abbie has arranged words, photos, drawings and paintings, and Neil's yarns and anecdotes to tell the story.

SOURCE: Bookshops, or by mail at $10.80 posted, from Karella Publications, PO Kangaroo Ground, Vic, 3097.

Doing up a derelict

BY DOUG PEERS

derelict: adj, deserted, abandoned, neglected, falling in ruins — **derelict**: noun, abandoned and drifting ship, deserted property.

Incredible isn't it? Driving around the countryside you see all these brand new take-away homes — transportables (like take-away food).

You think to yourself: "Will that man's grandchild ever live in that house?" It seems that people only look after old homes that fall into the category of a mansion.

When my wife Lorraine and I were searching South Australia, high and low, for a few acres that still had worms under the sod, we came across a small place that had on it a three-roomed derelict.

"Well, you can soon bulldoze that", said the estate agent.

We signed on the dotted line and checked out this beautiful old stone pile. It had no windows, no floors, no doors, no power, no toilet, no sewerage and no water. But someone had built this house 130 years ago and lived in it (as we found out later) until 1930.

In our eagerness to leave the city, we left 20th century comfort behind, poured three concrete floors and moved in. Canvas doors and windows sufficed until we found old doors and windows from salvage yards and other old ruins around the area.

We realised that to add on to the cottage (as we now call it) we should try to keep the additions in character with the original dwelling. It has an easy decision to make as there were lots of stone ruins about the Clare Valley so the raw materials were easy to come by and cheap or free.

Windows, doors, door-frames, rafters, purlins, slate for floors, patios and garden paths, old lion's paw cast-iron baths and sinks, matchwood ceilings — all were available within a 15 mile radius in ruins which the owners didn't want to know about.

They could easily be obtained for the asking, or for a very small price.

I am no builder, but to save paying a builder $17 an hour I was prepared to become one. The same thing happened when we needed a plumber, an electrician and the house foundations.

It's always cheaper to go and ask a tradesman what to do than it is to pay him. In the country, they're awfully obliging and in some cases come around and get you started. The experience and new skills that may be picked up will save you a fortune over the rest of your life as well as ruling out the need for the dreaded mortgage (have you ever noticed that the first four letters spell the Latin word for death?).

If you are unemployed, as I was (and still am), it's quite easy to trade some labour; perhaps for materials or tools or a service, such as the use of a front-end loader, which could save you months of backache.

I swapped a few days' labour for a four-wheel tandem trailer which was in bits and borrowed an arc welder (for which I traded some vegies) and put it together.

Everything takes longer when you decide to restore or build on the cheap, but the advantages are many and **Earth Garden** readers know them well. The satisfaction that comes from completing a project which could have been a fantasy in your imagination cannot be measured.

I'll finish by telling you of an old country lady who heard about our herbs and vegies. On her first visit she saw me putting a few finishing touches to the kitchen, which I had just built. "There's a lot of work doing up these old places, isn't there?" she said.

Take-away homes? No thanks.

picking up stones

BY PAUL NICHOLAS

You must have rocks in your head if you want to build in stone.

We do and we love it.

There is nothing quite so satisfying as building in solid, natural rock.

With every rock laid there is a sense of fulfillment and lasting achievement. The work is slow and hard and very therapeutic — watching the walls grow is a sheer delight.

In about 50 days we have completed two rooms in the basement of our home. We anticipate the rest of the building will take another 200 or 300 working days.

The building team consists of my wife Pauline, myself, and Tamara, 12, Sally, 9, and Heidi, 8, helping when they are in the mood.

At no time do we allow the building to become a chore. We always try to view it as a creative expression and physical exercise — a sort of kinky substitute for sport and recreation. It is also an excellent cure for nocturnal insomnia: after a day laying stone, you sleep very soundly at night.

If you have the time, the strength, the health, the resources and the inclination, be thankful and get started.

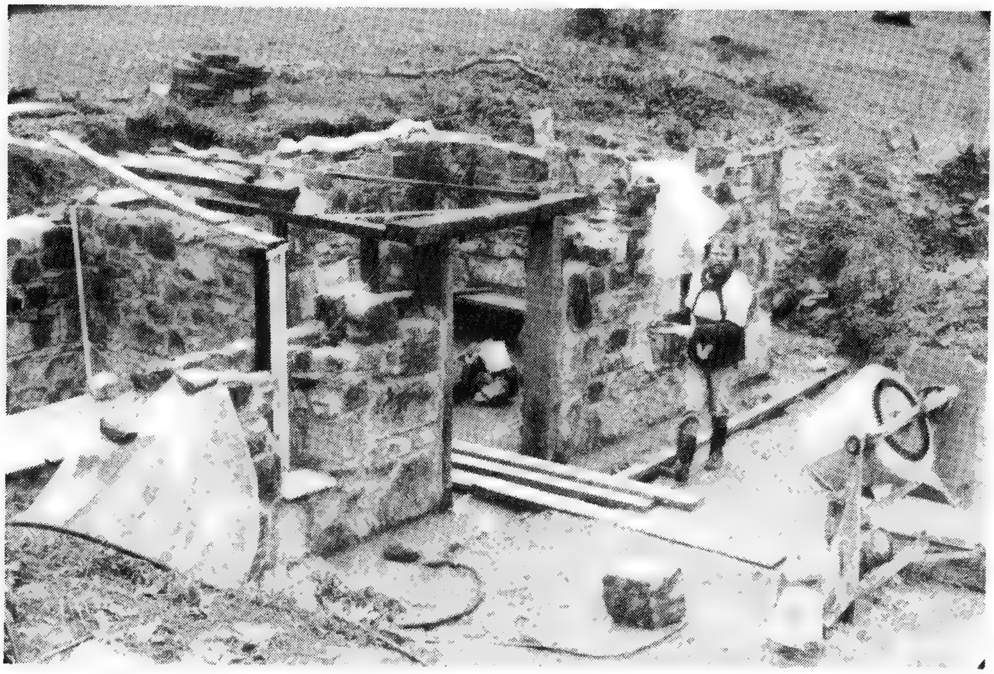
There are a few skills, which may be gained on the job, or from the odd book or experienced stonemason. Asking around, keeping our eyes and ears open, we soon picked up all we needed to know. **Then it was only a matter of picking up the rocks!**

So far we have moved about 80 tonnes of rock and we will probably need a further 80 tonnes to finish the house. Almost any stone or rock that can be lifted is okay. We have picked them from the side of the road, out of derelict buildings and even from the rubbish dump. If they come with flat faces or square edges, all the better.

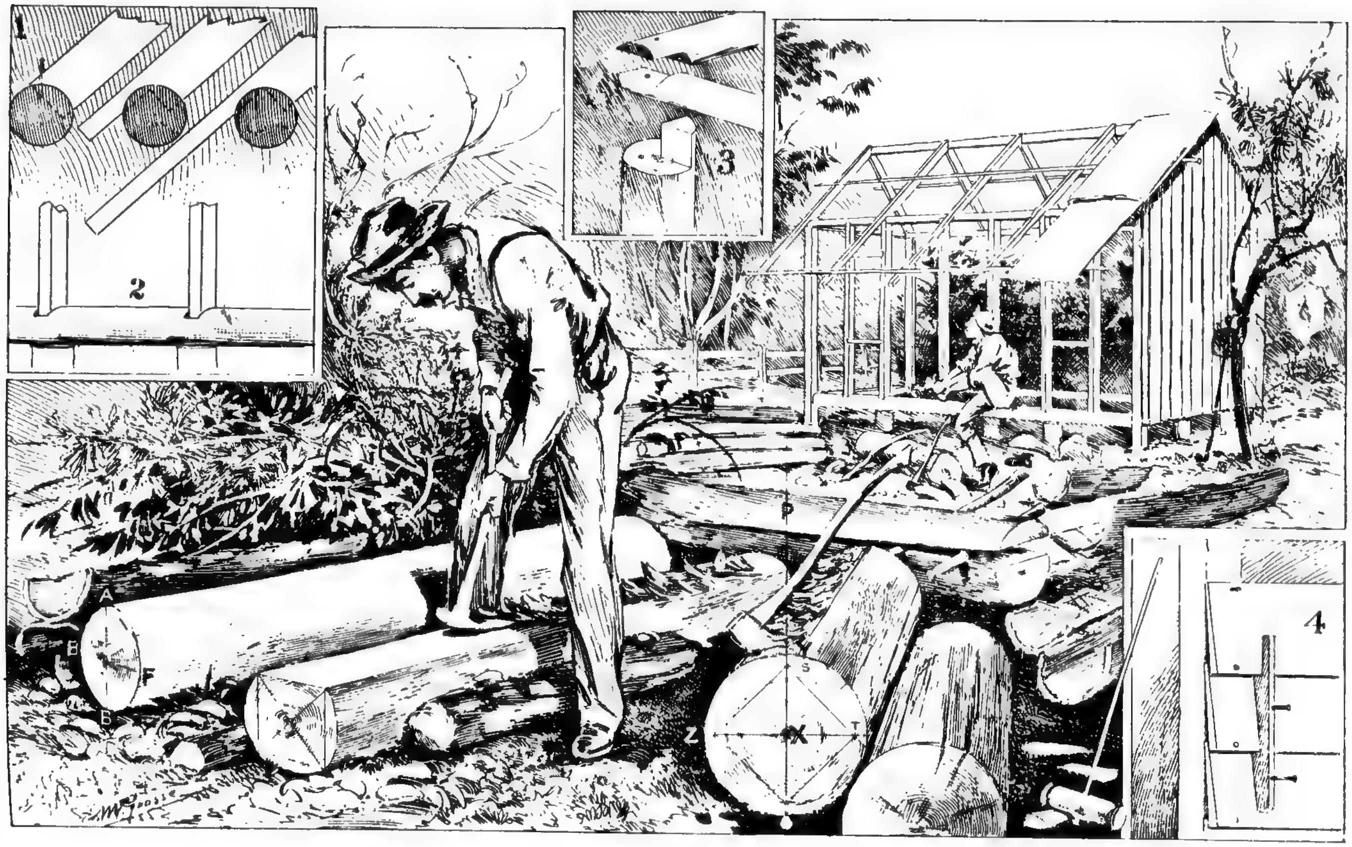
The stone home is by no means innovative or alternative, but building in stone gives us a deep appreciation of our forefathers and an affinity for the pioneers who first settled this land.

There is also the comfort of knowing that the home we build will last many generations, outliving fire, white ants or rot.

Within 40 km of here there are five owner-builders working on stone homes in various stages of development. We hope this will encourage a few more people to give it a go and keep the old art alive.



Photos show Paul building the solid structure which will be the cellar of his stone home.



A slab cottage

By W. H. Clarke

(Reprinted from The Agricultural Gazette of NSW, 1900)

A very cosy place can be built of slabs, even by a man without much training as a carpenter.

When sawn timber is to be used, it is customary to lay out your plan, work out specifications, and tell the timber man to cart it round in the morning.

When the timber yard is the swaying forest, it is not a bad plan to have a good look round among the trees first, and calculate possibilities. Of course, some dimensions have to be decided upon, and, say, for a start, a couple of rooms and a kitchen will suffice. For the two rooms, a wall length of, say, 24 feet by 12 feet wide will allow of one room 10 by 12 and one 14 by 12.

In the way of posts, there will be required four pretty stout ones for the corners and two for each doorway and each window. In fixing up the frame, matters should be so arranged that, instead of the usual earthern floor, planks can be laid.

A good idea is to let the floor-plates into the corner posts by means of a mortise, like a rail, using substantial timber, squared along the top, and supported at intervals, so that the door and window posts may rest upon it, as shown in the rough sketch. It will be noticed that the corner posts are let into the ground a little. The floor-plates would be put in before the top-plates are put in position.

The top, or roof plates, should be fairly stout, squared on the outer side only. To fasten them securely to the corner posts, and to avoid any joinery more intricate than can be accomplished with mortising chisel or axe and saw, the top of the corner posts should be cut as in *Fig. 3,* and the top-plates joined by cutting out as shown in the same figure; then they would be overlaid, and made secure by driving a strong spike through a bored hole (to prevent splitting) into the top of the corner post, and, if additional security were deemed necessary, a couple of spikes into the projecting piece.

Joined in that way, the frame would be immovable.

Before the top-plates are put in position, it is necessary to cut out a mortise for the window and door posts. A block and a few lengths of rope are invaluable in building a house with heavy timbers. To get the top plates into position, a stout sapling about 3 feet longer than the corner posts can be lashed straight up against them, so as to stand a couple of feet higher than the top.

If two blocks are available, one should be made fast to the top of each sapling; but if you have only one, you can hoist up one end of the plate first, make it fast to the sapling, with sufficient slack to lower it into the right position, and then hoist up the other end. Make that fast, and then you can get the door posts, etc, adjusted and fitted with greater ease.

Whenever a mortise is made in round timber, there should be a piece the width of the shoulder cut out and trimmed flat; the hole being cut out in the flat space, the stud will fit in true and firm.

The Roof

In a building of the dimensions indicated, and where a simple gable roof is adopted, not many rafters will be required. The greatest difficulty will be experienced in determining the proper angle to cut the upper ends to firmly meet the ridge-plate. If a board or batten cannot be procured for this purpose, it would be a good plan to cut out the round timber used so that it will be flat at each place where the rafters will come.

Where the rafter rests on the top-plate, a place should be cut away as shown by dotted lines in the diagram, *Fig. 3.* The rafter can, if desired, be carried out some distance, as in the illustration, to form a wide eave or even a verandah. The place in the top-plate for the rafter to fit into can be prepared by cutting in with the saw and knocking the pieces out with a chisel.

There are several other ways of fixing the roof, but where the extensive squaring of timber and the delicate adjustment of angles, such as can so easily be carried out with sawn timber and plenty of tools, are to be avoided, it is thought the one suggested will be about as good as any.

There can be no question that, on the score of cheapness and comfort, the old stringybark roof cannot be excelled. But nowadays roofing iron has become so cheap that it is scarcely worthwhile bothering about bark for dwellings. Besides, to the settler, roof catchment for water for domestic use is a serious consideration, and on that account alone anything but galvanised iron is not to be thought of.

Where a place is built low and there is no ceiling, the sweltering discomfort of an iron roof can be somewhat diminished by having in the gables large openings on hinges that can be operated with a piece of string, and closed in wintry and wet weather. In hot weather the continual passage of air through the openings will make the house far cooler.

Slabs

Nine feet will be ample for the slabs, which are split out very much in the same way as fencing rails. It is necessary to have, however, at least four or five good wedges and to take particular care to nick well and deeply with the axe along the splitting-line, so as to preserve as nearly as possible uniform width and thickness.

Before putting into place, the edges of each slab should be trimmed level, so as to fit closely. If a really neat job is desired, every slab should be gone over with the adze, and all the rough clumps of splinters and unsightly excrescences shaved off the back and front.

Then the slab should be ruled along the edges with a chalk line, stretched from the narrowest part. Everything down to that line should be cut away. This work can be greatly facilitated by driving a set of pegs deeply into the ground so as to keep the slab securely in position on its edge whilst being adzed.

When the slabs are split out of green logs, and used for building purposes immediately, it must be remembered that a considerable shrinkage will occur as the wood becomes weathered; so that a wall that seems weather-tight during erection may, at the expiration of a few months, become as open in the seams as a cane basket.

Under such circumstances, it is next door to impossible to have a slab wall sufficiently tight for comfort without strips of zinc or plaster on the crevices. If zinc or metal of any kind is to be used on unseasoned slabs, the strips should only temporarily be tacked on at first, and then, when the shrinkage of the timber has practically ceased, the strips can be made secure. When clay packing is used, the material simply falls out as the space between the slabs increases.

The Floor

For the floor joists, stout saplings squared on the upper surface and where they rest in the plates could be used, but sawn boards would be indispensable.

To get the joists quite true, so that the boards will lay evenly upon them, it is a good plan to leave the thicker end a bit full where it rests on the plate, and then use the spirit-level and trim down as required, adzing off a chip at a time. This takes a bit of time, but it is worth it, because there is really nothing so uncomfortable as a badly laid floor.

Doors and Windows

Ready-made doors of all sizes and ready-glazed sashes with frames ready to fit right in, can be procured so reasonably that they are cheaper, even with heavy carriage rates, than anything a man can make for himself.

Kitchen and Fireplace

One side of the kitchen is already completed when the back of the cottage is slabbed up. The frame for the other sides can be made with little trouble. Two corner posts and two door posts will support the plates for the roof which can rest on rafters carried right out as shown in *Fig. 1.*

For the kitchen, a floor is not so necessary, and the slabs can be rested on the ground or let into a grooved log.

The fireplace in a good many cases is a serious difficulty. It is not unusual to find where a huge, unsightly, cavernous structure occupies almost the whole side of a room, that the smoke will go everywhere but up the chimney. This is because the fireplace opening is too high and the chimney is too big.

A sheet of tin that can be adjusted on a couple of nails, so as to lower the opening, can be used with good effect in wet and gusty weather; but it is better, if possible, to get a piece of thin sheet iron, which can be bent round a log and bolted together with the sort of cheap little bolts they use for galvanised iron, to make a smoke stack, which can be fitted into any crudely constructed fireplace, and will draw well, provided the collar, or smoke approach, is kept well caulked with clay or something to prevent a bye-draught.

Squaring Timber

Many of the frame plates and posts suggested for our frame or slab building will need to be squared on one or more sides.

For determining how much it is necessary to cut off a piece of round timber, say, 20 feet long, 12 inches diameter at one end, and 9 inches at the other, so as to get a flat face in a true line the whole length, there is one fairly simple way that can be followed safely by the novice.

Haul the log to a place where it can rest evenly on the ground and fix it securely with chocks on each side. With a plumb-bob (a pocket-knife swung on a couple of feet of string will do) strike a line as shown in dots A B through the natural centre of the smaller end of the log. As a rule, if the natural centre is not quite clearly defined, the point can be guessed sufficiently accurately.

When the line A B is marked, another line, E F, at right angles to it, and running through the centre, should be made. In doing this it is wise to use a square, so that the four segments into which the two lines will divide the end of the log may be practically equal.

Then the big end is marked out in a similar way, care being taken to get the plumb line at the large end in direct line with that of the small.

A line ruled from the points A to E will show how much is to come off the small end to get a square face. From the centre to the rim of the small end, in the log under discussion, 4½ inches.

To bring the large end down to this, so as to get a straight face, measure off 4½ inches from the centre along the lines X Z and X Y, and a line, S T, struck through those points will show the segment to be adzed away.

That done, a piece of string long enough to stretch along the log, is well chalked or charcoaled and fastened lightly from A to Z; the tighter it is pulled the better. By placing it in an axe-nick it may be kept well down on the log. Then the string is picked up in the middle and suddenly allowed to fall, thus making a guiding line that can be followed with a nail or something, lest it be rubbed out.

A similar line is marked along the line E Y. The log is rolled over so that it will be easy to get at the skelp to be cut off.

Some people, expert with the adze or broadaxe, can sail right in and square off a log almost by instinct, but where one has had little experience in the work, there is a certain amount of danger in using the adze.

Personal security and a better job can be ensured by using a crosscut saw to cut in at intervals of about 8 inches along the length of the log not quite as deep as the guiding lines. The chunks of wood can then be lifted off speedily, and if the adze does want to fly a bit there is always the next section for it to cleave into instead of one's shins.

The dressing down to the guiding line must be done carefully, and it is not a bad plan for a novice to use a little piece of batten as a straight edge to guide him until his eye becomes accustomed to judging whether he is scooping too deeply or leaving ridges.

If more than one side of the timber is to be squared, the parts can be measured off in the same manner as shown at the end of the log in the illustration.

The device shown in *Fig. 4* is a good one to adopt when erecting ordinary weatherboards single-handed. The nails are used in bored holes and just driven singly.

Mr W. H. Clarke was the editor of The Agricultural Gazette of NSW when this article was written.

Fireplaces

Ken Kern, Steve Magers, Owner-Builder Publications, North Fork, California, 1978, 192 pages, large format paperback.

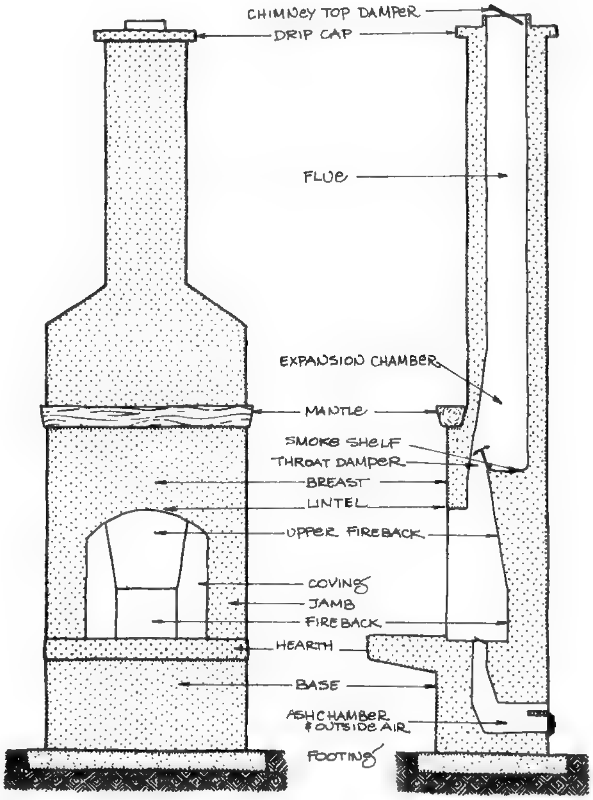
Everybody has a fireplace story to tell. The first day in our Balmain house Keith began burning dry palm leaves in the kitchen fireplace. When he went outside to see how the smoke was drawing, he saw there was no chimney attached to the fireplace. That fire was stamped out quickly! The house had been 'modernised' in the 1930s by having the chimney removed. Strangely, there were two other sandstock brick fireplaces, *with* chimneys attached, and they both worked well.

At our stone cottage at Marrangaroo, built as a road tollhouse in 1870, you had to place the burning wood, *just so,* in a spot near the middle of the metre-wide stone fireplace, or the room would be filled with smoke. A lot of hot air has been written about fireplaces, but not in this companion to Ken Kern's *owner-builder* series, which lays down step-by-step plans for building in stone, metal, ceramics and firebricks both fireplace *and* chimney, integrated into the house design. Excellent photos and drawings.

> **The traditional fireplace not only sends some 80 per cent of the fire's heat up the chimney but a goodly portion of the room's heat as well.**

* * *

> **In actuality, it is the flue, not the firebox, that creates fireplace draft. A flue is an exceedingly simple structure. Opening inside the house, it is a vertical tube running from the firebox at its lower end to its opening on the outside of the house at the upper end . . . once a fire is lit in the firebox, combustion gases and smoke become heated, less dense, and start to rise up the chimney. Cooler air from the room rushes into the firebox to replace heated air moving up the chimney, and in the process, it gives rising gases an additional upward push.**



Build Your House of Earth* * *

G. F. Middleton, *A Manual of Earth Wall Construction,* revised by Bob Young, jointly published by Compendium and Second Back Row Press, 1979, 130 pages. Hardback $15.95, soft cover $8.95.

We've often said that *Build Your House of Earth* is the best earth building manual. We still say it about this revised and updated edition. It is most certainly *the one book,* the builder's bible if you like, and you can build your house, from foundation to roof, with its help.

Bob Young, an architect, is a reviser who can appreciate and respect G. F. Middleton's work and bridge the gap of 27 years since its first publication in a similar spirit.

He has added his own colour photographs, redrawn "exploded" diagrams and illustrations, some history, metrification, a bibliography, rearranged some of the text and added much new material, including designs for a *"pit house"* and the *"Australian settler"* which will appeal more to the taste of the 1980s than the 50s.

This is a clear, crisply printed book too, a credit to its two Australian publishers. It is significant that Australia has produced the world's best book on pise and mudbrick building, a tribute again to G. F. Middleton's pioneering work.

The book covers selecting the house site, materials, design, footings and damp-proof courses, floors, pise building instructions, preparing earth, ramming, formwork, lintels, fireplace, chimney, roof, ceilings, wall finishes, garden walls, paths, adobe building, materials, moulds, brick sizes, building the walls, doors, windows, soil-cement, Cinva-ram, soil-bitumen, questions and answers, specifications, checklists and house plans. It's *all* there.

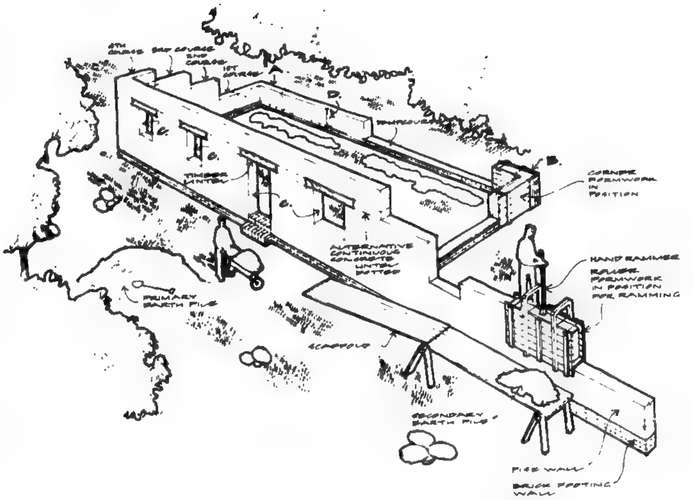
Earth walls are now generally left bare, or finished with a simple mud render. An awareness has grown among builders in earth that this most basic material harmonises subtly with the Australian environment, offering scope for a unity between buildings and surroundings that is hard to match. The incorporation of natural materials such as stone and timber, which share a common point of origin with earth, is a further example of this underlying sense of harmony.

* * *

Adobe or mud brick is probably the most popular earth building method used in Australia at the present time. There are many reasons why it has achieved its present level of popularity, the most apparent being the relative simplicity of the system. Many owner-builders see the method as not only being speedier, but less technical and tricky than pise, requiring no forms or soil-sieving processes. Most pise exponents will refute these claims, pointing out the time required in waiting for mud bricks to dry and in laying them.

* * *

... Pise has a number of favourable qualities which adobe lacks. For example, being a heavily compacted material, its compressive strength of 3.75MPa (using flat-faced rammer) exceeds that of adobe at about 2.68MPa. Since many local councils will not accept adobe as a load-bearing material, pise usually meets these requirements more readily, due to its higher strength characteristics.



Pisé house under construction, showing (a) corner form set up and rammed; (b) second corner section is rammed before filling in intervening section of straight wall; (c) bulkhead shutters must be placed in the form to stop-off for openings; (d) a piece of wood is placed in the form against the side to make a vertical recess for keying in the partition wall.

Ecologistics

"A how-it-will work grand tour of compatible alternatives, mutual self-reliance, the bio-economy, and ecotechnic peasantry; including gentle steps into the good life. Patrick F. Howden. Available in April-May, $9.98 posted from Second Back Row Press, PO Box 197, North Sydney, NSW, 2060.

This funky book by Patrick Howden (who used to be at the Eco-Tech workshop at Sydney University) is drawn from scores of sources, including *Earth Garden* and Stephen Szczelkun's survival scrapbooks, which it rather resembles.

It includes many building ideas, growing and survival tips in a work in which the accent is mainly on energy and rather scientific alternative "technologistics".

Very good practical stuff on windmills (and windmill boats), yachitecture and truckitecture, companion plants, plans for a folding bicycle and a wood-gas producer and more technical stuff like machines which run on hot and cold water (solar heat?).

A copy of Patrick's *Smallternatives* booklet is included in each book. This is a separately but simultaneously arrived at title to the Australian work, with similar aims, but rather differently expressed solutions.

If in Britain, copies may be obtained at the same price from Patrick at 'Clovelly', Mount Hawke, Truro, Cornwall, UK.

Improvisations

Traditional low-cost building techniques.

John Archer, Compendium/Second Back Row Press, 1979, 199 pages, hardback, $25.00.

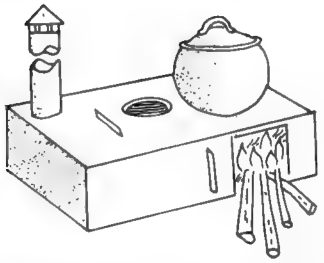
From miners' huts to fantastic African earth buildings and mud decorated mosques, *Improvisations* is a stimulus to the owner-builder to adapt and emulate the homes of all the world's traditional cultures.

John Archer, an owner-builder himself and author of the practical work *Dirt Cheap,* has selected the wide range of photographs for this big, beautiful book, mainly from dwellings built by primitive people.

The homes, in every conceivable shape and style, are made from natural materials such as stone, earth, wood, bamboo and timber. They arte old and new, tied up with the folklore and lifestyle of the people who live with them.

Extensive use is made of apt quotations and articles which come from a variety of sources, such as *The Argus* of 1947 for pise building. Ernest Flagg and Scott Nearing on stone rubble building (see EG9) and G. H. Middleton.

Improvisations is in the tradition of *Shelter,* but it comes off well in the comparison. The text is practical, if basic, but the inspiration is there on every page. We expect to see our country peppered with unique homes, built at low cost, after this!



I began to consider not only "primitive" (as opposed to civilised) building techniques but also the value systems that accompanied them. One of the lessons to be learned from primitive builders is the way in which they use whatever material is available and shape it to their purpose. In so doing they create an architecture of charm and simplicity which, while it may ignore many of the comforts we take for granted, gives to the occupants the opportunity to live a dignified, self-sufficient existence.

SOURCE: *Build Your House of Earth* and *Improvisations* are available in bookshops, or by mail from Second Back Row Press, PO Box 197, North Sydney, NSW, 2060 (add $1.00 each for postage).

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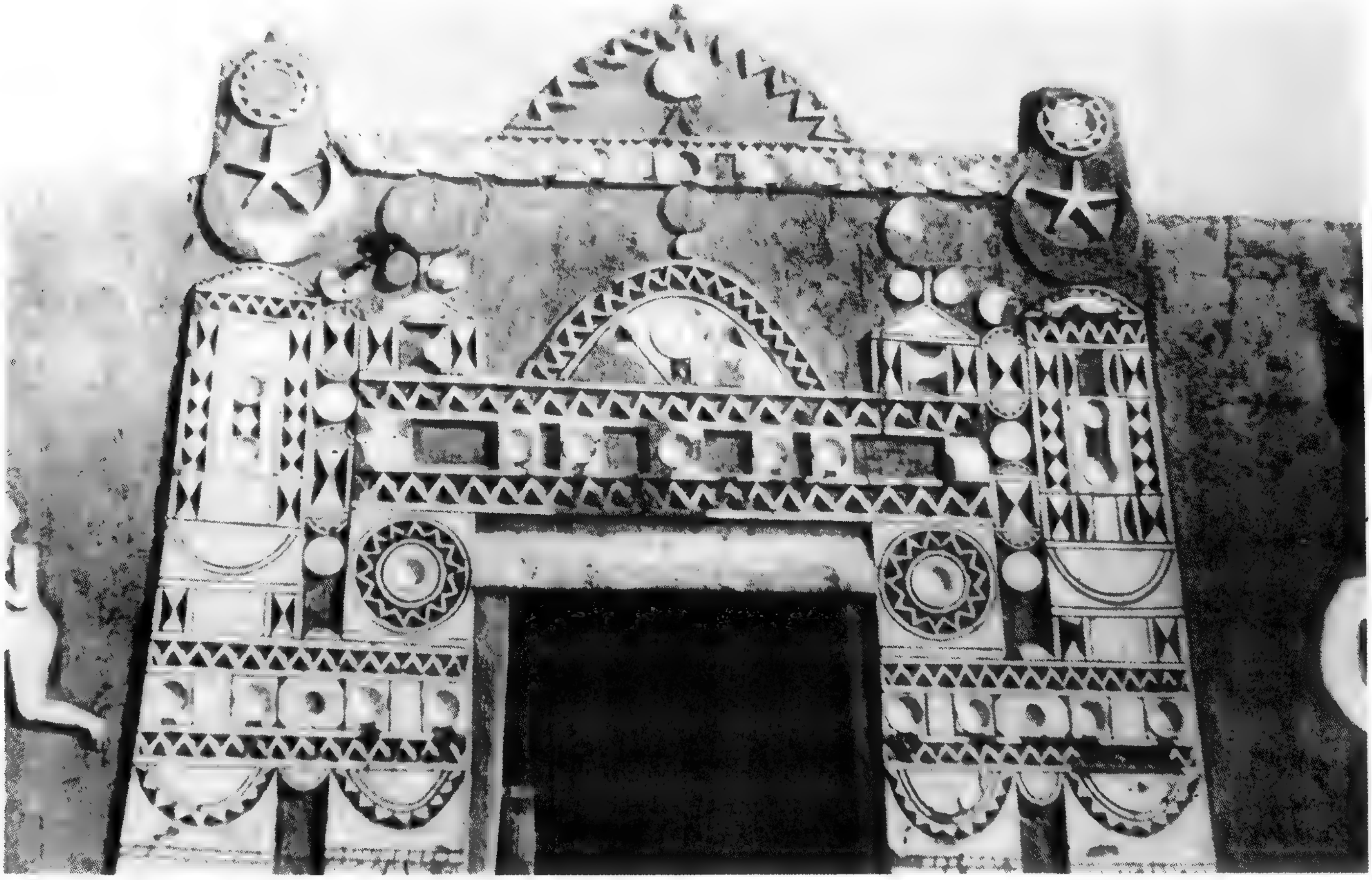
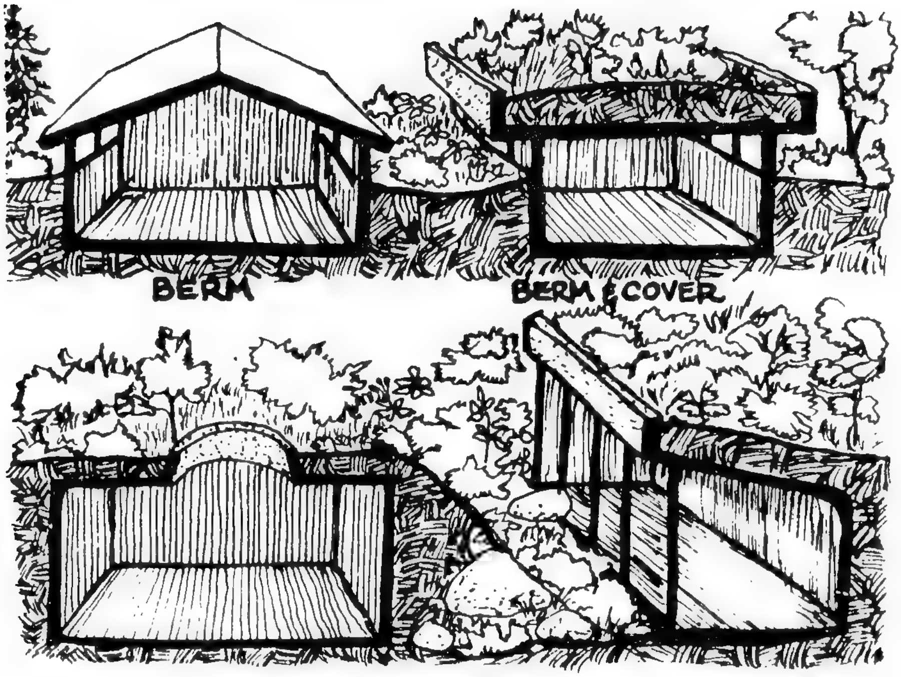
For more building book reviews and John Archer's article on Owner-builders, see *Access 1* (EG22-3), pages 114 to 130.



Decorative carving of great delicacy and complexity in a Sudan mud house. From *Improvisations*.



EARTH SHELTERING

The Healthy House

An owner-builders guide to biological building, Ken Kern, Owner-Builder Publications, North Fork, California, 1978, 180 pages, paperback.

Your house could be killing you. Deaths occur from accidents in showers and baths, on stairs and because of glass doors and electrical appliances. It could be making you ill. Remember poisonous lead-based paints and asbestos walls?

Bad ventilation, mental illness caused by high-rise apartments and less thought-of hazards, like radiation, bad lighting, moisture penetration and overheating caused Ken Kern to investigate *unhealthy* houses.

His conclusion was to build a *healthy* house, which is an underground home incorporating the concepts of his research. The building material is bamboo (which you can grow yourself) reinforced with clay (earth again). An appendix on building with bamboo, from a US Agriculture Department bulletin and a round tower compost privy add more interest to this fascinating book.

> Most enthusiasts for underground living feel that the chief advantage of this form of habitat is its modification of climate; this kind of earth-integrated building is sometimes referred to as "conservation architecture" . . . Earth dwelling works in the following manner: Below ground soil temperature stabilises. At a 2-foot depth, daily variations of temperature cannot be detected. At an 8-foot depth, daily earth temperature is nearly constant . . . thus soil becomes either an insulator or a heat source for the structure it envelops. The thermal mass of soil encompassing a subterranean structure tempers its inside climate.

SOURCE: *Owner-Built Books* **are in bookshops, or available by mail from Box 817, North Forks, California 93643, USA.** *Healthy House* **is priced at $US5.75 and** *Fireplaces* **at $US7.00. Add $US1.00 each for postage.**

070 SQUAD

We offer free advice to any resident-builder in NSW affected by a demolition order from council for non-compliance with Ordinance 70 or accepted regulations.

Please write to the 070 Squad, School of Architecture, University of Sydney, NSW, 2006, with the following:

(1) Details of the demolition order with explicit references to any breach of regulations.

(2) Detailed description of affected parts with measurements, drawings and/or photographs.

(3) Any supporting information, other opinions, examples of local precedent.

(4) Self-addressed and stamped envelope.

We undertake to reply as soon as possible and in the event of a court appeal to provide technical assistance.

Richard Aynsley (architect/scientist), Michael Dean (mechanical engineer), John Dixon (scientific technician), Richard Downes (licensed builder), Fergus Fricke (engineer/scientist), Philip Goard (skilled tradesman), Graham Holland (architect/builder), Bruce James (architect/builder), Colin James (architect/builder), Warren Julian (building scientist), Daniel McNamara (owner-builder), Roger Pegrum (architect/builder), Stephen Stokes (owner-builder). This information is recycled from *Nimbin News* (see review).

* * *

MULTIPLE OCCUPANCY

The Home Builders' Association has a kit form to set out an application for multiple occupancy (hamlet) development. Cost $2.00 from: Homebuilders' Association, Rainbow Region, PO Box 22, Nimbin, NSW, 2484.

Small is beautiful

Cow-bails in the making.

Peter and finished cow-bails.

Paul, house and covered bath area.

Storage shed, workbench.

The simple scale of Lynette and Peter Bray's hand-built timber home and farm sheds at Taylors Arm in northern New South Wales proves that 'small *is* beautiful'.

"We came here in 1976", says Peter. "There was nothing here, not even a fence, nor a post, a bit of wire, nor a square of timber."

It all shows what hard work can do in three years. Peter reckons that another three years should see some results, adding "It's like a slow-boat to China."

The timber used was cut out on the property by axe, chainsaw, wedge and maul. "Even though we have a large acreage of forest scrub, we are planting many types that are not here, such as quandong, red blackbean and flooded gum", Peter says.

"There are about five acres cleared, where we have a few cows, geese, fowls, bees and a donkey, fruit trees and vegies.

"The fruit trees are dished out like vines (in cordons) to avoid trouble from flying foxes."

Peter and Lynette have mixed their fruit trees and their decorative trees together to avoid monocultural planting and trees are also planted diagonally across the hill — "moon on the make", they say.

"We try to grow something next to the trees to help them along and shield them from predators. All plants like company.

"Get as coverage on the ground as you can, the sooner the better", Peter advises.

The buildings you can see in the photograph are: *the house,* a conventional design, 16ft x 12ft and 7ft 8ins off the ground. Access is through a trapdoor through the floor.

An *extended area* from the house, 16ft x 16ft with fibre-glass roofing covers the sink, washtub and a sunken bath. The bath, 6ft long, 2ft 2ins wide and 14ins deep is home-made with ply on the sides and painted with hydrogen adhesive paint ("very expensive") on to concrete.

The *cow bails* shed, 12ft x 12ft was cut out by chainsaw and has a gable roof. All the posts were split with a maul and wedges and were mainly tallow wood or mahogany.

The *workshop* storage was cut out with a chainsaw and has a flat roof, so does the carport.

Water to the property is by gravity, 2000 feet up a creek, which is very flat. "Though we're experiencing an extremely dry, hot period our fish are still alive", Peter says. The fish are trout, introduced and hand-fed.

We asked Peter Bray for some brief tips on felling trees and splitting timber for building. He says the techniques used are bush tradition, passed down and very little changed from the old days.

TIMBER FELLING

By Peter Bray

Selection

Usually hardwood is used for the outside of buildings (undressed).

The tree itself: shallow-barked for its type (a) — not a right-hand twist (b) — no dead branches on top (c) — no lumps (d).

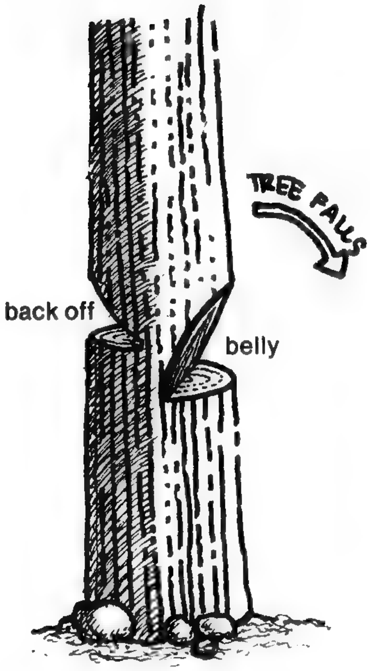
(a) is trouble, (b) big hollow, (c) dry rot type of flaw and the last (d) is the environment for windshakes; the timber breaks up, or opens up, similar to heartwood.

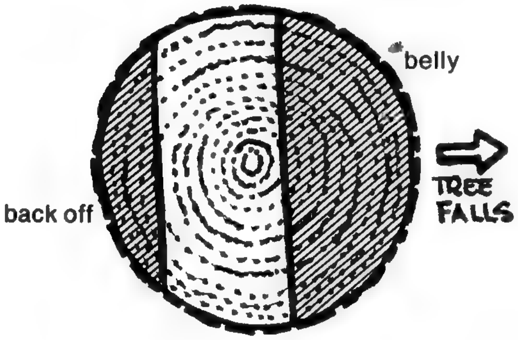
To fell

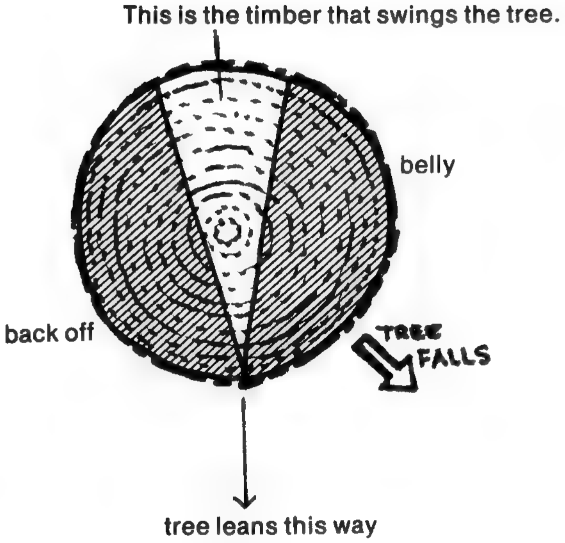
You *bellycut* first, then *back off* or *back cut* second.

Springboards are used only when the tree has spurs, or to get beyond excessive rubbish. It also serves to get into straighter grain and so on.

Never fell the tree across something that might fracture it.

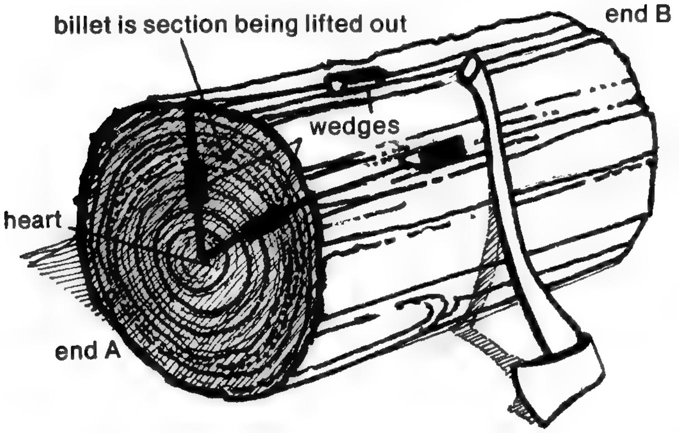






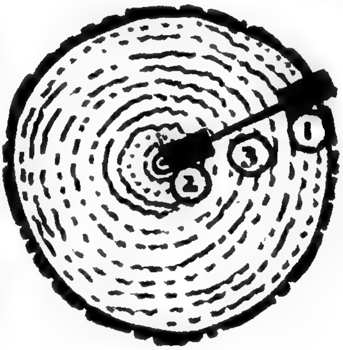
To split

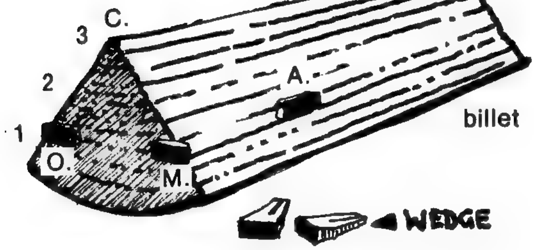
When the tree is down and debarked, cut out one length to the size you want as a trial or pattern for the rest. Then knock out a billet.


billet is section being lifted out
end B
wedges
heart
end A

Put wedges along these lines, starting at end A, anticipating where the split will go. Now, if it looks like running away, start at end B, work back and join with your axe.

Put your wedge to break the edge (like an axe) 1, then to the heart 2, then the centre 3. Never use heartwood for anything — a little bit of sap is okay.





Billet: 1, 2 and 3 is backing off. You're running with the grain this time. If it works up, turn it over. You may cut shingles this way. Wedge at O or M.

Later wedge both sides at point A. Take O and M out and give point C a thump. The whole bloody issue will jump — and clean too!

* * *

Peter emphasises this is only a brief summary. "You'd have to run a series", he says. We are interested in feedback on all aspects of wood cutting — clearing land, tree falling, wedging, dressing etc, which is getting to be a lost art.

More tips from Peter and Lynette. This time on weeds:

Keep out of cultivation:
(1) Crowsfoot.
(2) Ragweed.
(3) Summor grass.
(4) Kentucky Red, or Natal grass.
(5) Farmer's friend.

On grazing land (coast)
(1) Groundsel bush.
(2) Fireweed.
(3) Nodding thistle.
(4) Catspaw-hemp agrimony.

None of these plants enhance the soil. They rob. Remember: "One year's seeding, seven year's weeding".

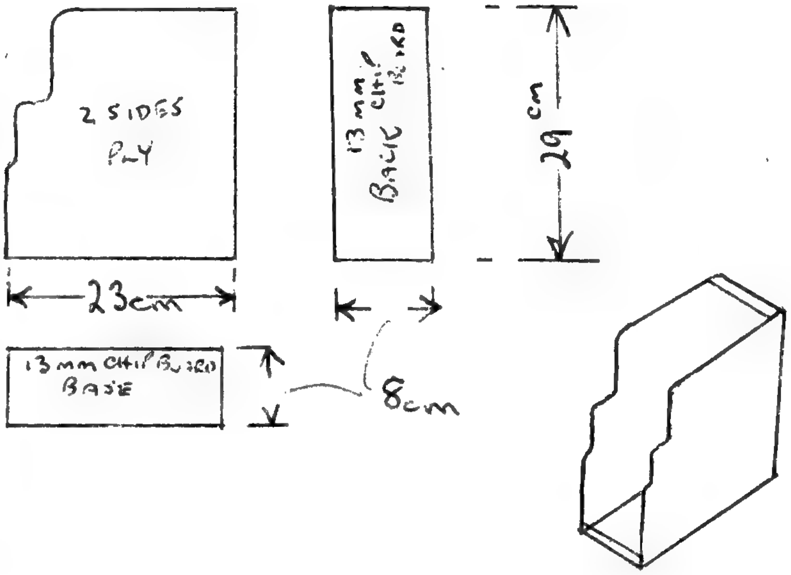
A MAGAZINE HOLDER
By Don Messingham

I made these magazine holders for *Earth Garden* out of plywood and chipboard from *free* offcuts from our local cabinet-maker.

After shaping the sides and cutting the back and base, glue and pin together. The back can be any width.

Using the first holder as a template, you may make further holders in the same way, but with varying widths, which will suit most magazines and make an attractive collection in a row.

I finished mine wih wood stain.



Not just a house...

BY HEATHER WATKINS

Our farm, near Naracoorte in the south-east of South Australia, was, for us, an ideal spot to live in accord with nature. We wanted a home that we could build ourselves, which suited the environment, and the lifestyle of our family — that's Keith and I, with our girls, Lisa 6 and Leanne 3.

We thought we would build in limestone, even after reading Alistair Knox's book, *Living in the Environment.* After all, we had never seen mudbricks.

However, we visited Alistair at Eltham and he converted us, on the spot, to mudbrick building. Alistair then visited us, leaving an unforgettable impression and much enthusiasm.

We were not just building a house — but a way of life.

While waiting for plans to be finalised, we began searching for materials. We found some old jetty poles which we've used as the main supports. Keith adzed these poles, then we oiled them and they're a real talking point.

All the timber for rafters, windows and door frames was cut from secondhand oregon (about 100 years old) which had been floor bearers in an old wool store at Port Adelaide.

Foundations: Keith dug and prepared all the foundations. The girls had great delight collecting the frogs which were hiding in the soil. Foundation pouring day arrived — along with several friends to help — with the families following at a later hour. It was a great family day!

Making bricks: We did this by piling up clay, mixed with a little sand, onto a cement slab (cement left over from the foundations), then it's puddled with bare feet, then straw is added.

Keith then does the shovel work, putting the mud into the moulds wet, smoothing the mud off with gloved hands, lifting the mould, rinsing and placing it ready for the next brick. We used three moulds at a time.

We've never spent much time making mudbricks. We usually only do one batch of 60-80 bricks a day, 180 being our maximum. This way, we've never tired of doing them and, in fact, always look forward to it.

After collecting our materials and being ready to go, we enlisted the help of Shane Aumont of Melbourne. Shane spent nine extremely hot days here, firstly making doors and window frames — an experience in itself. Then came the huge poles, which were squared-off using a chainsaw. These poles we erected with the help of a front-end loader — what a thrill to see progress at last.

All the poles and door and window frames were "stayed". Sections of mudbrick walls which supported the rafters or window frames were then built. The chainsaw was used to make "checkouts" — cut out slots for the poles which supported the beams and rafters. Shane's adept handling of the chainsaw was an education.

Shane left us with an unfinished skeleton, having done a bit of everything for us to follow. He also left behind a powerful impression of what it was all about. It certainly is "good enough for the bush", or for anywhere.

Walls: Laying the mud walls is tremendous fun. All the walls are laid on a bottom course of a double row of baked clay bricks and an aluminium dampcourse.

Then starts the mud! The walls grow like magic and, once you get grotty, mud goes anywhere and everywhere.

We just flop the mud "plaster" into place with gloved hands, put the brick in, levelling with a string line as a guide and taking off excess with the side of the hand. We reinforced walls every three or four rows, using fencing staples to attach reinforcing to window frames and poles. About eight rows of bricks a day is all you should do as the mud mortar tends to shrink.

"Bagging down" the walls was even better fun than laying bricks — gently hosing down the walls at the end of each day's work and rubbing off with a bannister broom and our hands.

We then rendered the walls, whenever the mood struck us, using a sloppy mixture of mud and rubbing the mix in — again with a bannister broom. The surface becomes harder and a more subtle texture is achieved with each application. We use *Acropol* mixed with the mud to seal the walls.

The mud sections of the work have been extremely quick, even taking the time spent in making bricks into account. We look forward to each encounter with the mud: The first bricks each day always seem to be the heaviest!

Keith continued with the main structural skeleton of the house, with me as tool-getter and encourager. Keith used either a chainsaw, for pole checkouts, or a 9¼ inch hand-held circular saw for other types of timber cutting. The smell of sawdust in the air was really great.

Progress was slow and steady and Keith achieved a brilliant finish for his limited experience. We used floorboards for our ceiling, placing these on top of the rafters. I found this an extremely satisfying section of the work. At last I was doing something constructive, with frustrations blown to the wind and soon lost in hammering.

There were, in the end, three sections of the building work we didn't do — the electrical work, the copper plumbing and glazing of the doors and windows.

We did most of the work together, but the help of our friends has been invaluable. One day we were baffled as to how we would ever lift a huge window frame into place, when over the sandhill came two carloads of quickly enlisted helpers, so we just supervised! Several of the mud walls were built by friends whose interest we found most encouraging.

The concealed guttering we didn't enjoy at all.

Plumbing: Well, there seemed to have been miles of it, all fitting together like a long snake jigsaw. We had water pipes to lay to the house, drainage pipes away from the house; a seemingly endless job, time consuming, but not too difficult.

The floor: We treated the area for white ants, then put down plastic sheeting and about two inches of sand. This formed the most marvellous all-weather *sandpit* for children — ours and visitors — for months.

We spent a great deal of time thinking about the floor, but once we started it all went down really well. We used red brick seconds and they certainly add a great deal of warmth and atmosphere to the house.

Keith was the labourer, bringing in the cement and bricks, while I laid the bricks one-by-one (over 2000 to date). The first 150 bricks nearly broke me in two, but, by the end, 750 over a 48-hour period presented no problems. We still have thousands to go!

It took 10 months from the start of erecting poles to moving in — much longer than we'd hoped. Living on site would have been a tremendous advantage.

Now we're living in the central section of the house, our large open living-kitchen area. We're hopeful that the girls' rooms will be ready by winter when I will be able to reclaim the kitchen pantry area.

We're looking forward to the day when we can sit by our large open fireplace, which will be built of rough, natural limestone. We have an old black cast-iron stove that Dad relined, which is just made for bread-baking. Once that's connected, there will be bread to eat.

The verandah areas are still to be bricked. I'm hoping to grow enough herbs to keep flies and insects away — any ideas? The northern verandah-pergola area is to have grape vines growing over it, but how do you get rid of those wingless grasshoppers which are finding the leaves so delicious?

I'm looking forward to eating our own fruit and vegetables, establishing a scrub garden, enjoying nature in a relaxed mood and getting reacquainted with friends. I'm ready to start spinning some wool, then hoping to weave some curtains this year.

We're absolutely delighted with our new home. To us it's a place of peace and love. We hope it's a place where anyone could feel comfortable. It's just rightly rugged for us, somewhere for us to be occupied for many months, or years.

It's been a lot of hard work, or perhaps consistent effort, but basically it's extremely simple, with no problems which couldn't be solved. We're glad we did it ourselves — it gives you enormous satisfaction — and we're glad we still have more to do.

Each aspect of building requires different techniques and different muscles. Each was a challenge worth conquering. Overall, it seemed difficult, but taken step-by-step, it just happens. The first step was the hardest — and Shane led us in that.

We know our home building has been the start of a new way of life. We hope it will be an ever-growing process, leading us, as a family, into a new awareness of the world and its people.

EARTH GARDEN 25
(Access 2)

Have you missed *Earth Garden 25?* Many of our readers did, because it was added after the 1978 paid subscription had run out.

EG25 was our *Access 2* Sourcebook of 130 pages and is available at $3.50 posted. It included major articles on fish farming, keeping livestock, fencing, food and nutrition, methane gas, low energy homes, food storage, killing and tanning and updates on *Access 1.* Don't miss out — fill in the order form on page 62 to obtain your copy.

earth people write

Dear Irene & Keith,

Can anyone send us any information on the pyramid theory and specifications? Someone in the **Earth Garden** reading circle should have something on this.

Yours sincerely, Rob & Ann McIntosh, 'Clover-Bank', Kendenup, WA, 6323.

Dear Irene & Keith,

We have just moved down here on 10 swampy acres of land.

We are trying very hard to set ourselves up as proficient duck and geese breeders. We have any type of duck you can name and we're having a ball setting up.

There are no buildings and no piped water. We are in the process of stocking up and have 200 ducks, three geese, one dog, one pup, two cats and two goats. And we are slowly getting the vegie garden together. In time we hope to move to a bigger place right out in the country, where we can be as self-sufficient as possible.

If anyone needs any help or advice about ducks, or just wants to drop in for a chat, they're welcome.

Love, peace and happiness, Duncan, Tim, Debbie & Dianne McInnes, 253 Mornington/Tyabb Rd, Moorooduc, Victoria, 3933.

Dear friends,

I'm delighted to see **Earth Garden** starting again in 1980. I wish you luck and many more enjoyable issues. I find the information most informative, and well worth it.

We have six acres here on the south coast, moved from Sydney two years ago, wished we had done it earlier, but being middle-aged, the break was a long one. We love it.

We have a little chapel in our place, which was brought down from Bemboka. I turned it into a country crafts centre for local work. It is interesting work. It took two years for me to make up my mind, but I believe "you will do things when you are ready". Well, I better go and feed the animals.

Be in peace and good health, Helga Moorfield, Clover Cottage, Candelo, NSW, 2550.

Dear Keith and Irene,

I am in the process of organising a course on self-sufficiency through the local technical college. It will be organised through a programme called 'Outreach', which only requires 12 people to enrol in a course for it to be convened.

What I am organising is a 12 week course, but longer and shorter ones are possible.

People enrolling in the course pay $15.00 unless they are pensioners or unemployed, in which case it is free. The convenor or teacher is paid at a rate of $14.13 per hour. A quick calculation will show that this is very much a government-subsidised form of alternative education.

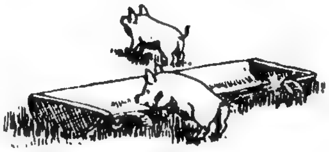
That's my information. Perhaps there are other **Earth Garden** readers who can get 12 people together and organise a course on a special topic. I have been reading EG since it started. It has inspired and helped me in many ways to make the transition from a dependent city life to a pretty well self-sufficient life here.

Best wishes, Susan Curran, Tormell, NSW.

Dear EG people,

I would very much like to hear from anyone who is growing, or has access to organic or bio-dynamic white or brown rice. Does anyone know where I can buy cold-pressed oils?

Thanks, Simon Browne, 29 Pururu Avenue, One Tree Hill, Auckland 5, New Zealand.



Dear Keith & Irene,

We have missed **Earth Garden** and the feedback from EG people which is a source of encouragement and ideas. So we hope you don't decide on any more holidays for a while.

As we've found that money is essential to maintain our farm and ourselves, we have been raising pigs and would like to suggest to EG readers that pigs are a friendly lovable source of income.

Even if finance is limited, you are able to run a sow or two and sell the weaners (eight-week-old pigs) to commercial fatteners. There is a ready market — at least in our area — for this type of pig.

Provided normal good husbandry and feed management are observed, your garden will supply a sow and litter with enough feed to supplement grazing and keep them in good health. The Agriculture Department is a ready source of information on pig management, feeding and housing. We run pigs and love them!

Best wishes, Eddie & Roslyn Hayes, Grenfell, NSW.

Earth Garden,

I saw your address in the **New Age Directory** and decided to write to see if you could help me. I am trying to get as many varieties of papaya (pawpaw) seeds from different areas of the world to grow here in Hawaii. If you have papayas and send some of the seeds, I can reimburse you for the costs of shipping.

Yours for natural living, John A. Crawford, 4821 Sierra Drive, Honolulu, Hawaii 96816, USA.

Dear Keith and Irene,

What I would like to see is a collated list of what prospective **Earth Garden** people should beg, borrow or buy before they move onto their rainbow — maybe something like the chapter titled "The Raft-Loads" in John Seymour's **The Fat of the Land** (Faber).

Even planning on at least a year's reserve of food supplies (until the 'surviving' vegetables are preserved) in advance, is a staggering task. When we start into details of essential machinery, chicken wire, fence-strainers, medical kit, bicycle, **Fowlers'** jars, de-horners and the billion-and-one other requirements, the mind develops an overloaded circuit and refuses to function at all. Help us!

I would love to hear from any 'new pioneers' in Tasmania (failed or successful) about their experiences. After 11 years' exile this last 12 months will be the longest.

Love and peace, Heather Stone, 8 Banksia Street, Clayton, Victoria, 3168.

Thanks, Heather for a great idea. We would like to hear from other Earth Garden readers on what they think is necessary to start a life of self-sufficiency in the bush. We will assume the basic axe, saw and hammer. Write at any length to The Life Raft, C/- Earth Garden. Best entry gets $20, with free issues of EG27 for all those used.

PS: We did tackle a year's supply of food in Access 2 (EG25), pages 203-5. — Irene & Keith.

Dear friends,

I recently acquired a rural property which has on it an old Trueline hand-operated brick making machine. I have been unable to get it operational and suspect some parts may be missing. Would anyone have any information on its assembly and operation? Also the proportions of cement, sand etc, that should be used?

Tony Rose, PO Box 18, Bourke, NSW, 2840.

the kasbah trail

BY KEITH VINCENT SMITH

You reach the kasbah trail by climbing up through the snow covered Tizi n'Tichka pass in the High Atlas mountains at some 7200 feet on the road from Marrakech to Ouarzazate in southern Morocco.

It isn't long after descending that you are in bleak, barren country with bare hills and miles of gravel and you begin to see the magnificent rammed earth walls and towers of the kasbahs and ksur.

Usually, they are clustered along the sides of a river, or around a spring in tiny oases dotted with date palms and a patchwork of garden strips. Where there is water, there is man. Where there is man, there is the kasbah.

But if you walk a few hundred metres away from the *oued* (river) you are at the edge of the wilderness. Within its green ribbon, life is supported by a unique oasis permaculture in three tiers — wheat, barley and animal fodder crops planted on the ground floor, orange, lemon, almond and olive trees on the next storey and the date palms spreading over all as a living rooftop.

Kasbahs are characterised by their straight lines and square ramparts and their flat roofs — a contrast to the domes and barrel vaults of other Arabic countries.

They are the defensive buildings of the Berbers, the original inhabitants of Morocco, who are the dominant race in the south. They may date from the 14th century (and are likely to be in ruins), through to the 19th century. More recent fortresses are built in the tradition in which we expect to see them, manned by French Legionaires, as in classic films like *Beau Geste*.

The name kasbah is probably derived from the Latin *castrum,* left over from the days when Mauretania and Tingitania were far-flung provinces of Rome. The kasbah is usually inhabited by a family group with one chieftain and may be a rambling collection of earth buildings with or without a larger "palace" or fort. It is usually surrounded by walls.

A *ksar* (plural ksur), we were told, is more likely to be a fortified village inhabited by people from the same tribe. It is hard to spot the difference and we have seen a single walled pise building described as a ksar and a spread out village called a kasbah.

Each may have zig-zag covered alleys of chipped stone, or even a bustling market, but they are all built of earth, usually of pise-de-terre, or sometimes of sun-dried mudbricks.

The kasbah trail runs roughly parallel to the edge of the Sahara Desert, following a string of oases through villages with magic names like Irghem, El Kella des Mgouna, Skoura, Tenehir, Erfoud and Rissani (where it got too sandy for us to go further south), then north along the Ziz River to Meski Blue Spring and Ksar-es-Souk.

Of course, there are finely built earth homes everywhere you go in Morocco and eastward through all the Moslem countries as far as India. But the kasbahs are truly mud castles and palaces, often incised with geometric designs or studded with patterns in mudbrick.

Easily the most impressive kasbah we saw was the ochre-coloured fortress of Taourirt which dominates the desert hills not far from Ouarzazate. It is exactly how you would expect a kasbah to be.

This large collection of buildings has the typical square towers and ramparts, earth walls, verandahs, relief decorations, flat rooftops and arched windows set very high up from the ground for defence.

Built mainly during the 19th century, Taourirt was the base for one branch of the powerful family of Thami el Glaoui, the Pasha of Marrakech. The Caid's palace, the main building there, has ornate wrought iron grilles on its windows and contains a small mosque and a dining room which have their walls covered with brilliant hand-painted faience tiles. Now it is deserted and open to curious visitors for a fee of half a dirham (about 12 cents) each.

Ouarzazate itself is a small town whose kasbah is now a market. It is flat and dusty with a main street much like that of a country town in outback Australia.

About six kilometres north is Tifoultoute, another imposing kasbah, built much earlier, possibly by the great Alaouite sultan, Moulay Ismail, who ruled from Meknes and ordered 40 kasbahs to be constructed in the south, early in the 18th century.

It was once a luxury hotel, where Sir Winston Churchill is said to have stayed and painted the desert scenery, and was one of the sets for the David Lean film *Lawrence of Arabia*.

Yellow, red, brown, ochre, the ksur and kasbahs blend into the landscape as the earth from which they are built dictates. Their thick walls are ideal insulation against the sun which is always beating down and the cold nights of the desert; or protection from dust storms blowing in from the Sahara.

This would suit the dry regions of Australia — the practical benefits of courtyards and clusters of homes would translate very well.

Straw has been added to the earth mixture in recent kasbah restorations. Date palm trees are used sparingly to stabilise the earth structures; stone is often the foundation (as at Tifoultoute). In Tiznit, a desert "port" near the southern Atlantic Coast, pebbles have been added to the mud battlements.

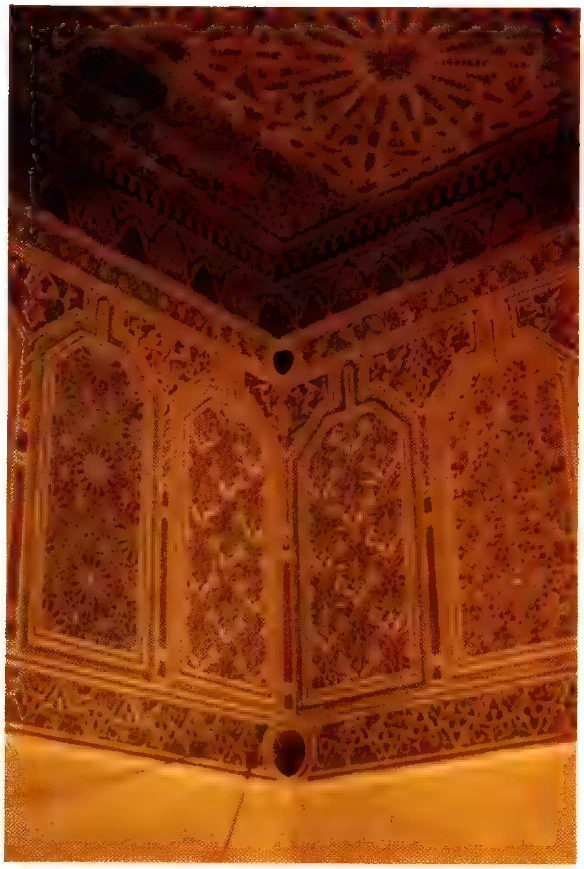
Building

We were lucky at several places along the kasbah trail to see the different methods in which Moroccan mud is made into pise walls and mudbricks.

You can see the techniques and their results in the colour photos which follow. Pise walls are built in much the same way as they are now in Australia. The method has been described in *Pioneer Pise (Earth Garden 16* or *The Second Earth Garden Book)* and in works like *Build Your House of Earth* (see review).

The wooden formwork used in Morocco is much less rigidly fastened than is usual here. The two sides of the plank shuttering are fastened by ropes stretched from one vertical wooden pole to another across the top of the form width.

These poles are secured at the bottom of the

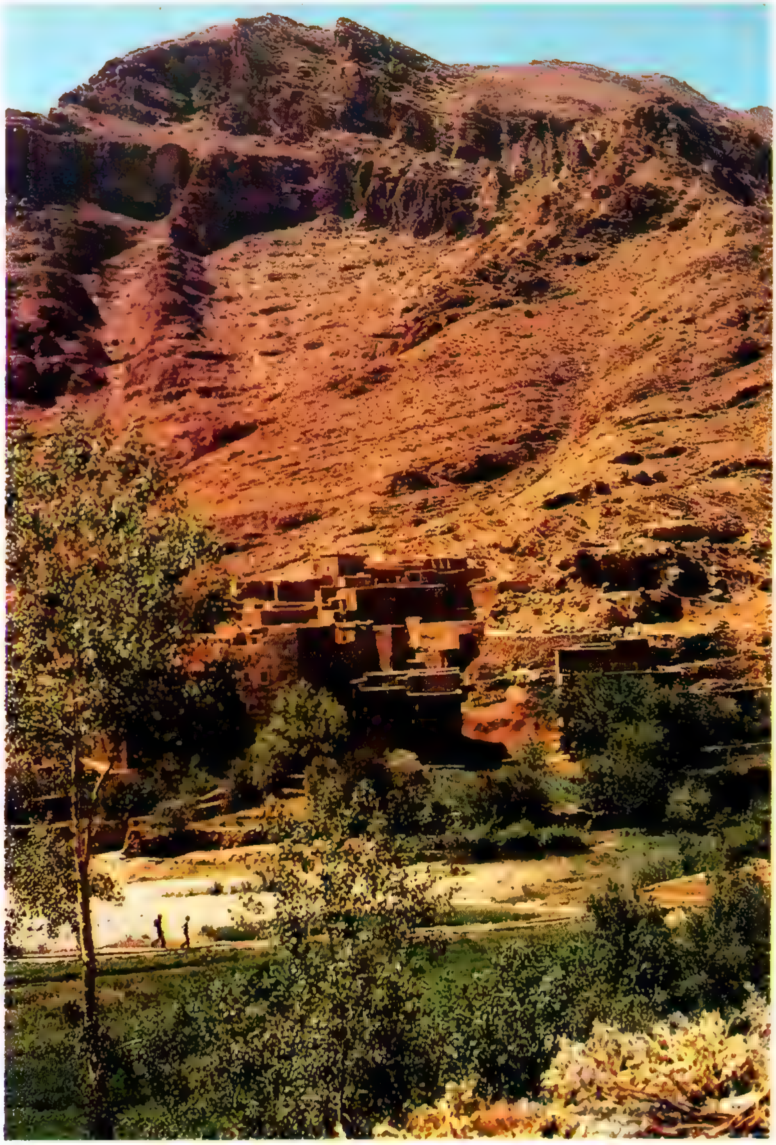


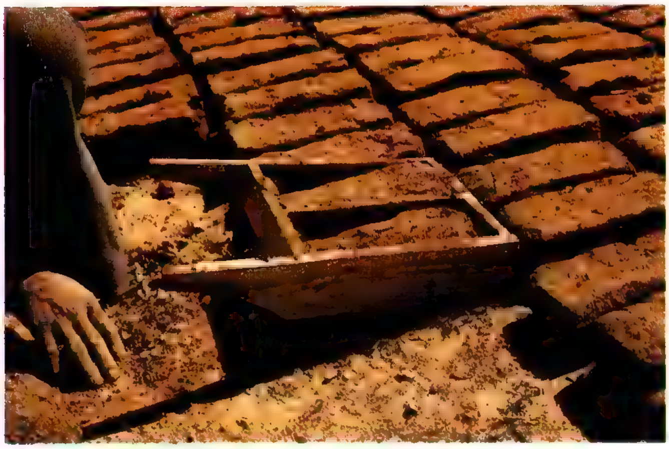
The Kasbah at Taourirt

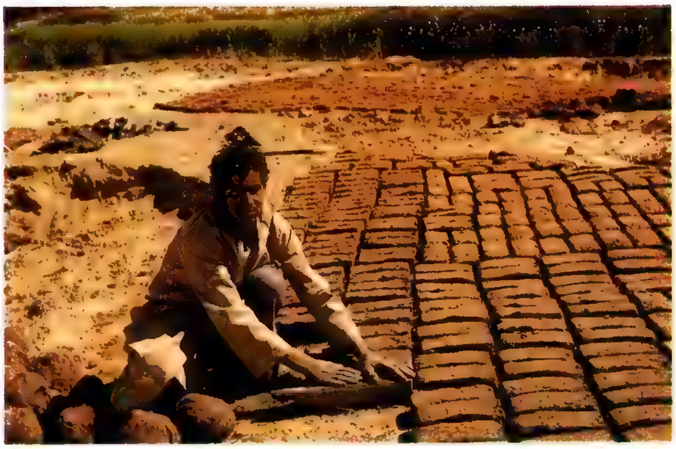
Top: View across the rooftops at Taourirt. Below: Square towers, ornamental patterns, slit windows are typical of Moroccan kasbahs. Right: Mosque inside the kasbah with walls and ceiling covered in faience tiles.

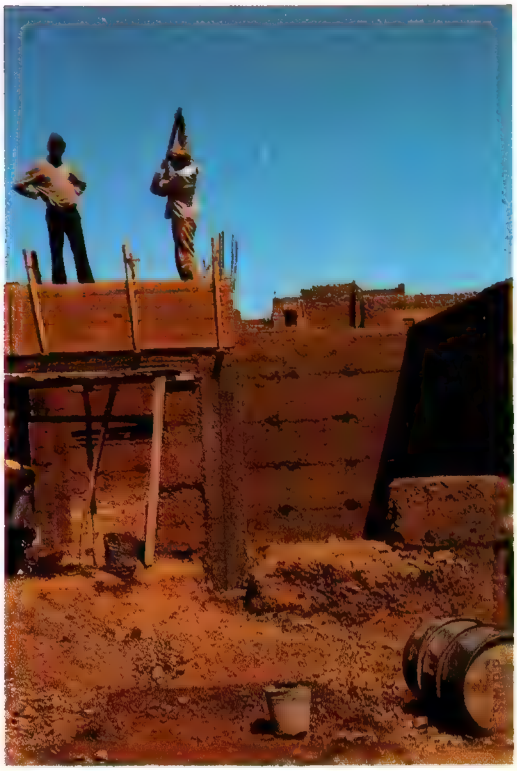
Forts in the desert

Above and at right centre: The earth walls of Taourirt. Left: Our camper van outside Tifoultoute. Below: Ksour cluster in a green palm grove of the rugged Dades Valley near Tenehir. Far right, top and below: Ksar at Tenehir and ksour with gardens. Top right: Multi-storey earth apartment at Irghem, first village below the Tizi n'Tichka pass. Below right: This kasbah at Mdint, near Ouarzazate, has a "lucky" storks' nest in the tower.



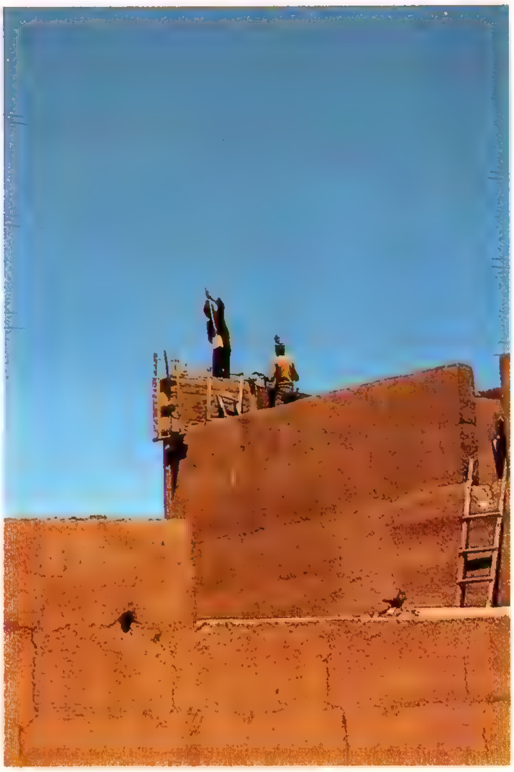


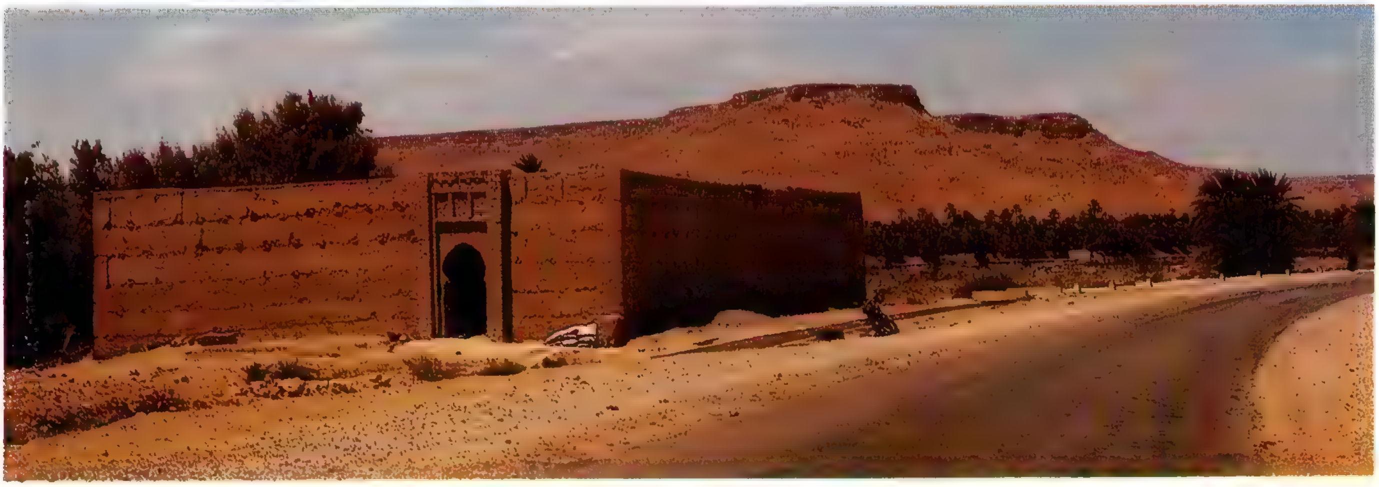




Techniques

Top: Mudbrick making at Fesna, near Risani in the pre-Sahara. Left: Pise walling near Tinedjad and, at right, near Boulmalne-du-Dades. Below: An ornate doorway in a pise house at Aufous near Ksar-es-Souk. Note the holes left in the wall after the removal of poles which support the pise forms.





rectangular form simply by inserting their sharpened ends into slots in similar poles which are laid horizontally across the foundation or wall to support the formwork. The forms we saw looked to be about two metres long and ½ metre wide.

When the shuttering is dismantled, the wooden poles at the bottom are simply removed and laid on top of the new section of wall ready to set up the formwork again. This explains why so many walls and buildings throughout Morocco are marked by regularly spaced series of holes.

In kasbahs (and rarely in other buildings) the holes are filled in. In any case, the outline of where the form has been can usually still be seen.

At the building site, earth is hauled up by rope in a bucket or basket and is tamped down in the form with a metal rammer. This can be seen in action in both shots. An old petrol drum was used to bring water for mixing the soil at one site. One of the walls going up at Tinedjad has a modern touch: a strong supporting corner wall of concrete, also poured into wooden forms.

The mudbricks were made in an unusual way. Rather dry balls of clayey soil were rolled from earth on the site. These were squashed into a two-brick wooden mould and flattened completely by hand. There was no "striking off" the top to make the brick smooth and no "footwork" involved.

Two protruding handles on the mould made it easy to lift off and start again. No straw was added and the earth blocks were left uncovered to dry in the sun.

See we not in Africke and Spain both, certain walls of earth, which they cal Formacei, of the forme and frame that is made of planks and boords of each side, between which a man may say they are rather infarced (forced) and stuffed vp, than otherwise reared and laid orderly; but I assure you, the earth thus infarced, continueth a world of yeres and perisheth not, checking the violence of raine, winde and fire, no mortar and cement so stiffe and strong.

There are yet to be seene in diuers parts of Spaine, the watch-towers of *Anniball,* the high turrets and sconces also reared vpon the tops of hils, made all of earth. PLINY THE ELDER, *Naturall Historie,* 78 AD, translated by Philomen Holland, 1601.

Travel notes

Dear friends,

Paste-up sheets are scattered about our lounge room, half-finished. There are pages with big holes in them, stories to type, letters to answer and parcels to make. There isn't much time to go into the garden.

We're home again, at work, so it looks like things are back to "normal" again.

We've missed receiving your friendly letters and keeping in touch with your doings while we've had our year's recess, but at last we're beginning to catch up again.

Thank you for all your good wishes for us and for *Earth Garden*. So many of you have asked for news about our sabbatical, so this is it.

Yes, we *did* have a marvellous holiday. We saw a lot of places and did a lot of things. It was a complete change from our usual routine but, after eight months of travel, we have to say it: *there's no place like home!*

Despite inflation and unemployment, Australia still looks like a "lucky country" when compared with many others. We have the space, the variety of climates, the bush and the sun. We have the raw materials for building a good life in this coming decade. The rest is up to us.

We arrived in London one icy February morning, having left behind the hot (40°C) weather of Sydney; tired, jet-lagged and wondering if we were quite sane. We bought our camper van — with its ready-made name of *"Ugy"* from the licence plate — and set out for Morocco. Our following story has a few tips for people who might be thinking of a similar journey using London as the base.

Our two months in Morocco were the high points of the trip. The photos in the preceding pages can only show one aspect of its fascination. We liked the souks and the French restaurants in Tangier, the beaches of the Atlantic coast, especially Essouira and Agadir, the High Atlas mountains, the oases, the desert, the walled cities and the open countryside.

We had no set plans and didn't know exactly what we were seeking, but Morocco gave us some fine memories, predominantly the feeling of being in a world where life is so much closer to the earth than it is in our society. Casablanca was a notable exception to this. It is a large, industrial city with no Bogart intrigue about it at all.

We watched potters and dyers and other craftsmen at work. We bought fresh food in the markets, especially the lush broad beans (a staple food in the north), tomatoes and oranges which are specialties of the country. Our salads were garnished with bunches of parsley and chervil supplied by women who sat cross-legged in the streets.

We liked it all: the men in their jellabas, the dark-eyed veiled women, the boys on donkeys and the round loaves of bread at the bakery. We saw the waterfalls at Immouzer-des-Ida-Outanane, inland from Agadir along the narrow, winding mountain road . . . but what a view of terraced hillsides, pink oleander bushes growing wild in the river beds and blue lavender along the roadside!

In Bulgaria and Roumania we had planned to take a closer look at this kind of self-reliant lifestyle, but in the end, we didn't get there, being deterred by the Yugoslav earthquake.

Instead we saw mainly the "tourist" sights as we drove from Spain to Greece and back through Italy, over the St Gotthard Pass (with "Ugy" boiling over *after* we'd reached the top) to Britain for the summer.

Since our last visit to Europe about 12 years ago, "progress" has left its mark, especially in Spain and Greece. This may have been good for the economies of the two countries, but for the people . . .? They now have high-rise concrete apartments outside whitewashed villages. Smoke from furnaces goes up into the sky and effluent from factories goes into the rivers. The industrial areas look like garbage dumps and the skills of self-sufficiency are dying out.

We glimpsed brief visions of the natural world as we passed through Europe, in sights like the neat allotment gardens of Switzerland, a water wheel here, a wind pump there, farms by the lake, fields of grain waving in the wind, or a horse pulling a steel-bladed plough.

Europe still has its grand cities, which nobody should miss, such as Venice. The camping ground was a short ferry ride across the lagoon at "The Republic of Fusina" and run by an Aussie from our own suburb.

We could still find some quiet and peaceful havens. We free-camped at a shingle beach with a well for a few days not 35kms from Athens. Here we celebrated Melissa's birthday.

Melissa quickly identified "Ugy" as her home wherever we were. She had her own stretcher bed and "cubby" and a net hammock where her dolls slept at night. She was 4½ when we started and has retained a lot of memories about our stay in Tangier, where she made a special "boy" friend, the pool full of carp at Meski Blue Spring in Morocco and the clear water of the Aegean. As you might guess, she is a real water child.

She was fascinated by the Leaning Tower of Pisa and can tell you *why* it leans. Irene was captivated by the elegance of Florence, with its beautiful Duomo, its paintings, the Ponte Vecchio and its shops. We splurged on a three-hour, five-course meal there which cost only $20 for the three of us and was the best on our trip.

Keith liked the red brick Tudor homes where William Shakespeare once lived, at Stratford on Avon, now restored and with herb and flower gardens added.

The main purpose of our journey was achieved with some research into old garden literature for a forthcoming book. Keith sat in row G near Karl Marx's seat in the British Museum and read in Duke Humfry's ancient library in the Bodleian Library at Oxford. One memorable Friday he inspected the *Feat of Gardening*, a manuscript treatise on growing vegetables written by Ion Gardener in 1440, when *The Garden* exhibition was specially opened for him at the Victoria and Albert Museum.

Later we spent three weeks in New York, being looked after by the American branch of Irene's family. This was a complete change and very enjoyable. The museums and galleries there and in Washington (where the Smithsonian Institute is excellent) are a good argument for the existence of cities.

Well, Melissa is five now, which will be a shock to people who remember reading about her when she was born (after EG9 went to the printer). She spent only the last term at school in 1979, but she has moved up to become "a big First Class girl", so keen to attend classes that she appears, dressed in her uniform, hours before it's time to leave.

Earth Garden is in its eighth year, starting with this issue. We hope you enjoy it.

Peace and love
Irene, Keith and Melissa

Touring by van

Touring with a camper van makes a lot of sense. It's a cheap way to see the world and we recommend it.

You have mobility, you can go where you want to go and stay there as long as you like, so you aren't tied down to any rigid schedule. You are independent, yet you have the security of a home base; a place to rest after a long day of sightseeing.

Irene and Melissa at the Trevi Fountain in Rome.

In our rolling home we could cook our own food, read books and play games if the weather was bad. We could stay overnight at a camping ground or "free-camp" if we liked a particular spot. Most vans are fitted with a stove, sink, water supply and gas or 12 volt electric refrigerator (as ours was). We also bought a chemical toilet which fitted in to the bottom of our clothing cupboard.

With this high degree of self-sufficiency we didn't have to worry about hotels, restaurants, or train, bus and plane schedules.

A major drawback was the escalating cost of petrol, which made us feel that camper van touring may not exist in a few years' time. Of course you must compare this expense with the cost of accommodation and other forms of travel.

Even a year ago we were paying 68 cents a litre for petrol in France and Morocco and not much less elsewhere. When you are standing still the only expense is for food which, we found, can usually be bought cheaply at local markets. It's also wise to stock up on your tinned food reserves at supermarkets in countries where food is cheaper (as we did in Spain before crossing into the French Riviera).

Like many Australians and New Zealanders we started our journey in London and like hundreds before us we went to Australia House in The Strand to shop for a camper van. This was February, 1979. If you are going to Britain now, the van site is probably at the car park opposite the National Film Theatre at Waterloo.

That's just across the Thames, across Waterloo Bridge from The Strand.

In winter at Australia House there were only a few vehicles to choose from because most people are in the south following the sun. When we sold our van at Waterloo in late July after six months away, there were about 120 vans for sale, with some obvious bargains for buyers. Still, we managed to sell in a few days and had some fun as well.

We aren't mechanics — in fact Irene is the sole driver — so we took the same risk any body does when they buy a used car, but we weren't sorry. We paid £stg1300 (at that time worth $A2300) for our 4.8 metre long comfortable old Commer with its high roof which allowed us to stand and walk around inside.

The Melbourne family who has used the van for a year tossed in all the essential gear, including sleeping bags, cooking pots and pans, cutlery, some food, maps, camping books, spares, jigsaw puzzles and other children's games, a Continental warning triangle, a gas lamp, a gas heater and lots of free advice. This is normal practice and a great money saver.

It was snowing every day in London and we were paying high prices for food and a third floor room in South Kensington. We didn't waste any time and set off for Dover as soon as the black ice had thawed. We stocked up with food (prices are cheaper outside London), crossed the Channel and started to learn about living in a confined space when we struck our first troubles in France.

We waited four days at a village near Le Mans for an engine water pump to come from Paris and a few days later we had to buy a new battery. This seemed serious at the time but was soon forgotten as "Ugy" took us some 15,000kms through Morocco and Europe with not even a flat tyre.

In Spain we began to thaw out. Melissa took a swim at Estepona on the southern coast not long before we crossed over from Algeciras to Ceuta, a Spanish port in mainland Morocco opposite the rock of Gibraltar.

There was a great comeraderie among other travellers on the road with whom we swapped tips and stories. There were playmates for Melissa at every camping ground, even if they didn't always speak English. The camp sites varied in quality and price, but there were usually toilets and showers in the most basic, with bars, stores and restaurants in the upper price range.

If you want to travel this way we strongly advise you to join the Automobile Association (AA) in Britain. This can be arranged through your own motoring organisation, such as the NRMA or the RACV, at a small charge. The AA can supply maps, tour itineraries and camping books listing the grounds and their facilities and telling you how to find them.

More importantly you can insure your car through the AA and obtain the "green card" essential for driving in Europe, Asia and Africa.

You are a full AA member in Britain for service and breakdowns and your car can also be repaired by motoring groups in foreign countries using a voucher system (we did this in France) with some of the outlay being recouped when you return to London.

Tip: You need extra insurance to cover driving in Spain and Australians need a visa to visit Spain. Check this before you go.

Camping Gaz for stove, light, heater and refrigerator is easy to get in every country. In Britain Calor Gas is cheaper, more easily available and lasts longer, so you may use interchangeable bottles and adaptors. These came with the "spares" in our van.

There are some exaggerated stories about the hazards of travel. We certainly had no hassles or troubles of any kind from anybody. Don't stick your neck out, use commonsense and you'll be right. Our confidence gained the further we travelled.

Rip-off: After you've changed all your Italian currency at Brindisi for the car ferry to Greece, a port tax is slapped on. The customs men then strike their own rates when you pay the tax from other currencies. Ask about departure taxes when you buy your ticket. We found car ferries very expensive this trip.

Back in London we joined the friendly people at Waterloo which we found was the best place to stay. We even came back there after selling our van for £stg$1000 ($A2000) for a barbecue two days later. There's Aussie beer in the nearby pubs and it's a five minute walk to central London.

We never did get to see the reputedly crowded camping grounds outside the city where fees are $10 or more a night. Our "pitch" cost us 10p (20c) a day, if the traffic bobbies asked us to put a coin in the meter when they passed by.

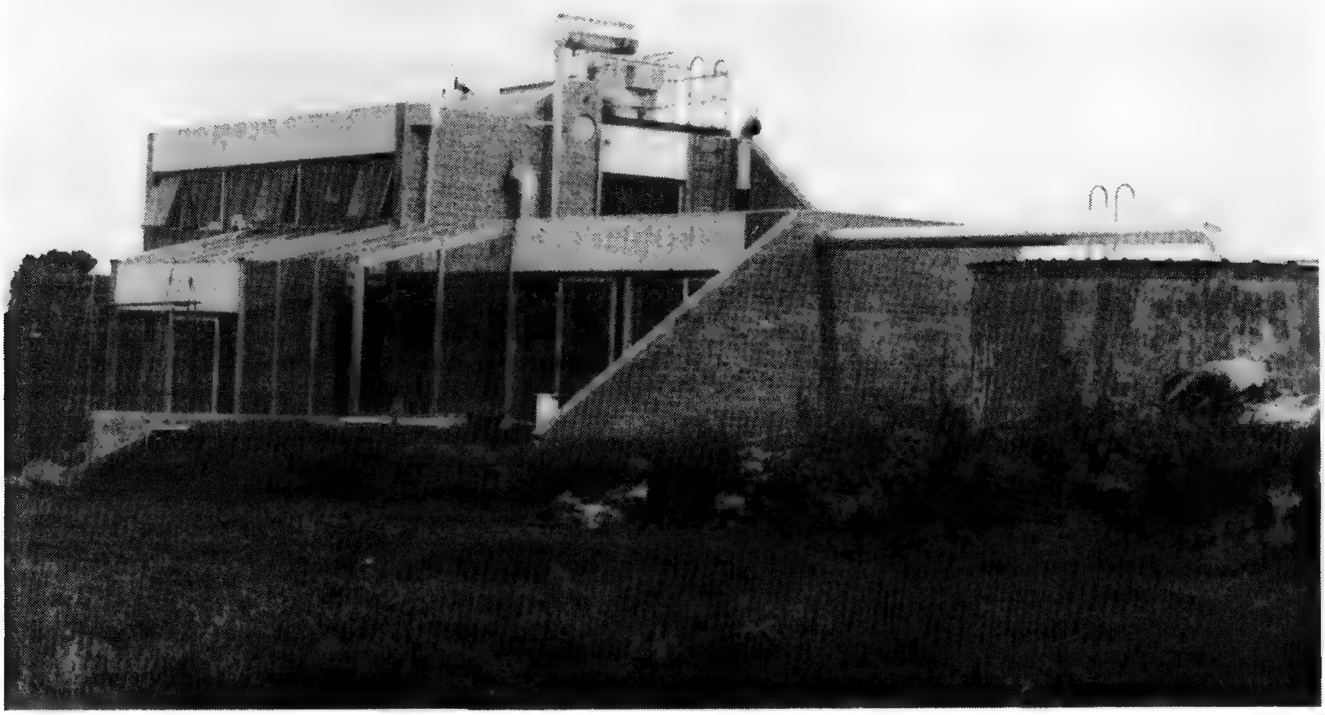
Camper vans range in price from a few hundred dollars to $10,000 or more for the "super" German or US models with hot and cold showers and other mod-cons. Most people will find the van which suits their needs and their pocket.

Young people go for kombi-vans and families for bigger types like "Ugy". Our advice is to save a stiff neck and buy a van with a raised roof — but keep an eye out for low bridges and under-passes!

We wouldn't mind doing it again, but not for a while. If you are planning a trip, we wish you Bon Voyage.

Our solar~electric

BY MICHAEL BOS



View of the Bos House from the north-west, showing the 10,000 gallon rainwater storage tank (at right), angled wall for hot air collectors, greenhouse, rooftop flate plate collectors, hot and cold water tanks, upstairs bedrooms and living room and kitchen (at left).

We lead a simple life, with our solar-electric house being our main interest.

Our 12-volt lighting is bright and generous. Although we are conscious of our battery storage, we have not had to skimp. Our baths are enjoyed in piping hot water which has been pumped up to our head water tank by an automatic 12-volt pump.

The array of solar hot water panels and the slow combustion stove (a coke fired **Aga**) combine to heat our 150 gallon hot water tank.

Our power supply finds our batteries bubbling — fully charged — storing two weeks power supply (to be doubled at a later date) from the photovoltaic cells and a small wind generator.

Each evening the girls watch a half hour show on our 12-volt television set. Judy and I entertain guests with music from our 12-volt, 25 watt, hi-fi system while we drink hot coffee made on the slow combustion stove from coffee beans ground in a grinder powered by our 240 volt, 500 watt inverter.

The inverter is capable of running many household electrical appliances. However, our refrigerator is a 12-volt compressor built into the kitchen bench like a deep freeze and the automatic washing machine is now being fitted with a two-way 12-volt motor.

Other items include: 12-volt ducted vacuum cleaner system, 12-volt exhaust fans, 12-volt drill and a 12-volt soldering iron.

The house keeps a very even, comfortable temperature even though some of the thermal control systems are not completed. These include sun control louvres, heat store, hot air collectors and a sliding ceiling in the living room.

Systems completed include two fireplaces (one a

home

heat-circulation, non-draught type) and an attached greenhouse with a solar heated plunge pool (with heat store for the winter). There is through ventilation for the summer, central vertical heat store and hot air collectors for three days' storage of winter heating.

Pelmets and curtains and double-walled acrylic sheets insulate glazing in the coldest weather.

The house is built on a northern slope in an east-west axis, with virtually no glazing to the south and most glazing to the north. The house is fully insulated, of double brick construction on a concrete slab. It has a flat roof and split levels, being a two-storey on the lower level.

There is an appearance of airyness and light, with all rooms looking north across the paddock to a belt of trees.

Even at this stage, the temperatures are always moderate and comfortable. Many people find it difficult to believe there are no outside mains services apart from the telephone.

We have planted half an acre of sugar beet for future alcohol production to run Judy's car. We will be building two solar stills — one for converting alcohol and one for converting dam water into fresh water.

We are currently leading a busy life, with a continual stream of visitors arriving to look over the house while we are still working on the last details. There have been overseas visitiors and people from universities, schools and government bodies.

The house design won the Gas and Fuel Corporation low energy award last year. Since then we have had a State Government grant in the form of instrumentation to monitor the house and a Federal grant towards some of the solar equipment.

While building our house we all lived in a small two-storey cedar barn with solar cells powering nine lights, water pump, television set and cassette deck with a flat-plate solar collector giving us hot water for our outdoor bath. Cooking was done with bottled gas and we used a pan toilet.

The solar-electric components of the house work out at roughly $7200 for the basics.

This is made up of 8 solar cell panels at $700 each, 18 second-hand batteries at a total cost of $100 (new $900), 80 fluorescent lights and wiring at $1000 and 12 volt to 240 volt inverter at $500.

Solar electric hardware for the Bos house was supplied by John Paton of Solar Charge (Aust).

The Bos house is at Lot 262, Robinsons Road, Pearcedale, Victoria, 3912. Please telephone Michael and Judy if you would like to visit them. Phone: (059) 78 6785.

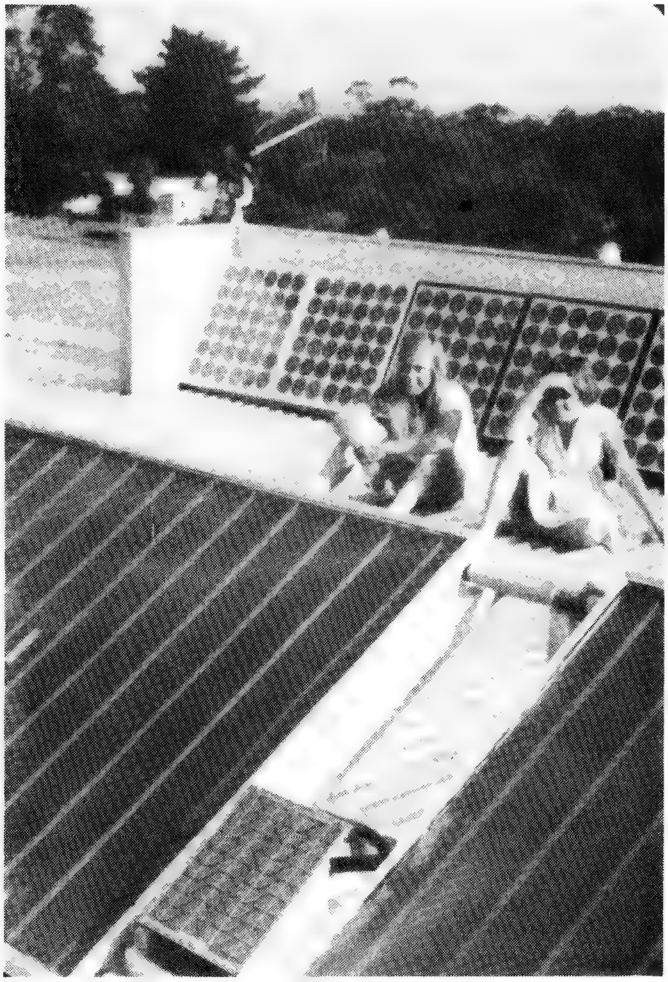
Michael and Judy Bos and their three daughters, Fiona, 11, Eugenie, 10 and Nadette, 9, enjoy all the benefits of modern living in their new home at Pearcedale, Victoria — yet the energy which supplies their needs comes from the wind and sun.

They have a washing machine, electric lights and kitchen appliances, hot water, a hi-fi record player and a television set, but no quarterly bill from the electricity authority.

The Bos house cannot be affected by power shortages, strikes, failures or price increases. It is independent of mains connections for gas, water and electricity.

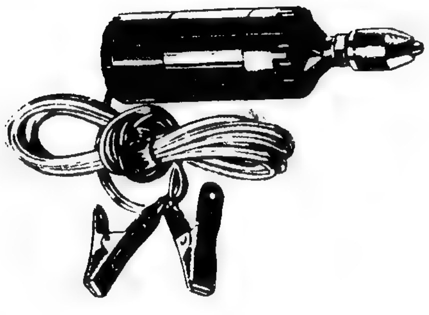
Its fluorescent lights run from photovoltaic solar cells, which turn sunlight into direct current electricity. Boiling water comes from a combined solar flate plate and combustion stove system and is pumped by a solar cell water pump.

Power from an array of solar cells in the roof of the house is stored in a bank of batteries. There's also a solar-heated swimming pool, a solar greenhouse and other innovations which Michael Bos, an industrial chemist, describes in his story.



Fiona and Eugenie on the rooftop with the wind generator, solar power cells and solar hot water panels at front.

Solar sources



LOW VOLTAGE EQUIPMENT

To prove that the solar-electric age is here at last, John Paton of Solar Charge (Aust) is stocking a range of low voltage hardware which will run from photovoltaic cells.

These include 12 volt, 8 watt *fluorescent lights* which are four times more efficient than ordinary light globes. Also available in 12 volt, 20 watt, 24 volt and 110 volt models.

Also: 12 volt electric power drill, 12 volt soldering iron, pumps in high volume suitable for irrigation, and for domestic and solar hot water circulation use, inverters for 12v, 24v DC to 240v AC, heating pads and small wind generators.

John says that prices of solar cell panels are on the way down, with a 1.5 amp, 12 volt unit selling for around $390 and that the quality of the smaller panels has improved.

For further information, send SAE to Solar Charge (Aust), 6 St Ninians Court, Brighton, Victoria, 3186.

Solar electric fences

Daken Corporation, 32 Sydenham Rd, Brookvale, NSW, 2100. Price Street, Oakleigh South, Victoria, 3167.

Daken sell a 6-volt solar powered portable fence for strip grazing at $165 and a 12-volt solar powered unit with internal battery for long fences where there is no 240-volt power, for $365.

Solar sauna

PO Box 466, Hollis, New Hampshire 03049, USA, $US5.

Plans, cost estimate (of US items) and materials list for building a combination solar greenhouse, solarium, sauna, hot tub and deck, all in an area of 12 ft x 24 ft, attached to your home.

Solarex solar panels

Solarex Pty Ltd, 33 Bellona Avenue, Regents Park, NSW, 2143.

Panels with various arrangements of silicon cells in series, with blocking diode, sealed and weatherproof. Solarex cells have 10 to 13 per cent efficiency and their 'concentrator' cells rate at 15 per cent efficient.

Also available from *Edmund Scientific Co,* Quentron Optics Pty Ltd, 576-578 Port Road, Allenby Gardens, SA, 5009.

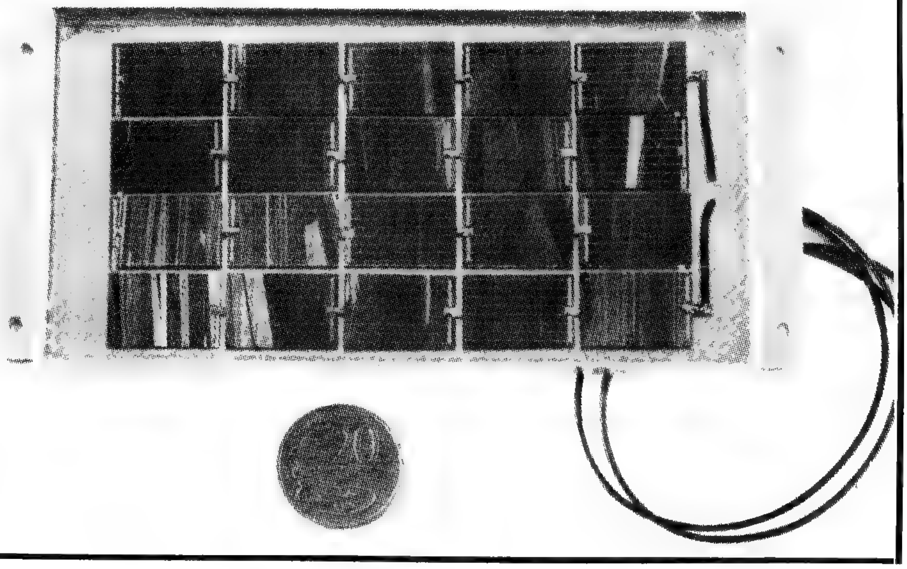
For other sources of solar-electric cells, see *Access 1* (EG22-3), pages 97-98.

SOLAR CELLS

Challenge Electric SP solar panels

Challenge Electric Pty Ltd, 15 Dale Street, Brookvale, NSW, 2100

Three models: SP1, an 8.5 volt 75mA panel, with rectangular photovoltaic cell array for battery charging. Cost about $34.00 (plus packing and post); SP2, a 12 volt, 430mA panel, cost $269 and SP3, a 12 volt panel (which charges at a peak of 17 volts), cost $388. The company also makes *Electra* electric fence equipment.



The Australia & New Zealand Solar Home Book***

A Practical Guide, S. V. Szokolay & R. W. Sale, Australia and New Zealand Book Co, Sydney, 1979, large paperback, 130 pages. $7.95.

At last! A practical, thorough and very welcome book on solar power for the home written with our part of the Southern Hemisphere in mind.

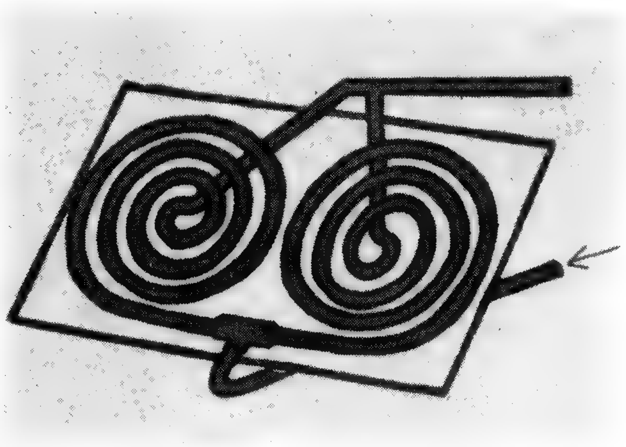
Its merits include solid, clear backgrounding of the approaches to harnessing solar energy (mainly thermal), good illustrations, explanations of the basic scientific principles involved and some solid facts on energy use.

There is sufficient detail to build a flate-plate solar water heater, plus methods for modifying homes to incorporate passive solar effects and appendices which show actual Aussie and Kiwi solar homes, list local solar equipment suppliers and explain how to work out sun positions.

Dr Steven Szokolay is the chairman of the International Solar Energy Society, ANZ section, the director of the Architectural Science Unit of the University of Queensland and author of *Solar Energy and Building* and *Climatic Design.*

Richard Sale is completing his Master of Architecture thesis at the University of Queensland and has worked on energy conservation for northern Australian housing, using computer simulations. Both authors know their stuff. Our copy supplied by ANZ Book Co. Recommended.

> The purpose of this book is to give an understanding of the potential of solar energy, as well as of the difficulties involved with its utilisation. Current research and development work is outlined, but emphasis is laid on what can be done *here and now* by the householder.
>
> The main idea is that we look at our energy consumption first and try to reduce it as far as practicable, without giving up our standards of comfort. We can then use solar equipment to provide at least part of the remaining requirement. If millions of people make little moves in this direction, the result will be far more significant than any single and spectacular 'breakthrough'.



Spiral hose absorber. For pumped circulation only: it may be a dark hose with water, but a clear hose with a black fluid is better.

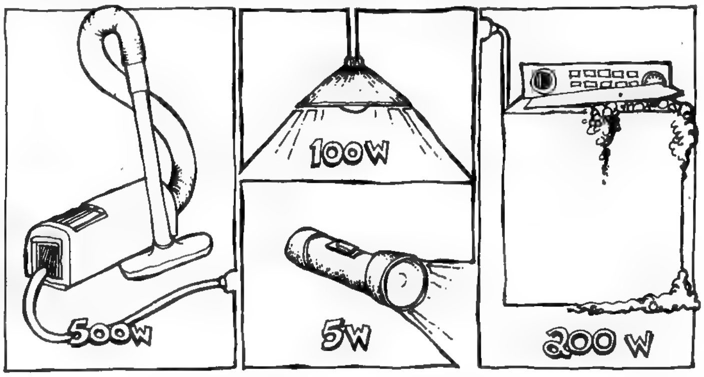
smallternatives

personal guide to saving energy and money.

Smallternatives Working Group, Second Back Row Press, Sydney, 1979, paperback, 63 pages.

We are all going to have to change our bad energy consumption habits. You can wait until you have to, or you can do it now, with this little book's help.

This is a sampling of just five from nearly 200 smallternative hints for saving energy in the home, in transport, at leisure, in packaging and at work:



> In the average Australian home we use about 20,000 megajoules of electricity each year. That's equivalent to running a 1000 watt radiator continuously for over six months night and day, or to having a television on for twelve hours a day, every day, for more than ten years.
>
> - **Use fluorescent light tubes rather than ordinary light bulbs when you need high lighting levels.** Fluorescent tubes are five times more energy efficient than ordinary bulbs. In addition, fluorescent tubes last as much as ten times longer. Low wattage ordinary bulbs are adequate in rooms where only low lighting levels are needed, such as the laundry, storerooms and garages.
> - **If you're cold, put on more clothes** — it's cheaper than using any kind of artificial heating.
> - **Shade windows to help keep your home cool.** Heat gain through windows will be reduced by as much as eighty per cent by shading the glass.
> - **Use small appliances for small jobs, eg, toasters, kettles, and frypans rather than the stove.** The grill on your stove uses about three times more energy for the same job as a pop-up toaster.
> - **Use ventilating fans in the kitchen only when needed.** In only one hour these fans can blow away a houseful of warmed or cooled air.

SOURCE: Bookshops, or by mail from Second Back Row Press, PO Box 197, North Sydney, NSW, 2060. Price $2.50 posted.

The Energy-Efficient Home

A manual for saving fuel and using solar, wood, and wind power, Steven Robinson & Fred S. Dubin, Plume, New York, 1978, paperback, 158 pages. $5.95.

Not Australian, but written for America, this little book is a hive of ideas for making a home use less fossil fuel input.

It seems to cover just about everything, such as: insulation, caulking, vapour barriers, storm windows, weatherstripping, space heating and cooling, water heating, cutting down personal energy use, heat storage and also a section each on wood burning and wind generated electricity.

Our copy from *Publishers Distributors Pty Ltd,* 104 Bowden Street, West Ryde, NSW, 2114. Postage about $1.00.

Fossil electrics—AC/DC?

By Mario Zolin

I enjoyed Joseph Smith's article on generating your own electric power in *Earth Garden 20,* particularly as he quoted the same law as I did. He called it Murphy's law, I called it the First Law of Engineering.

It is also known as Sod's law, Finangle's law and the Second Law of Thermodynamics, or "The best laid plans of mice and men ..." Regardless of title, it is a law that should be carved in foot-high letters on every self-sufficient homestead porch.

But ... unfortunately I am going to have to disagree on some points with Joseph. I hope he doesn't mind. The disagreement is based on 15 years as a practising engineer and some considerable research, head-scratching and costing before settling on our own power system here at *Malemijo.*

Firstly, I dislike direct current generation on a number of very valid points, particularly where non-technical people have to operate it (and this seems to be so in 99.9999999 per cent of self-sufficiency cases).

Briefly, DC machines cost more, are less efficient, require more maintenance and more *expert* maintenance, are no safer as far as shock is concerned and a lot *less* safe as far as fire is concerned than the equivalent 240 volt alternating current machine.

In addition, DC appliances are costly and hard to come by, unless you have 12 volt DC, when automotive gear can be used — but these appliances are more toys than real things, except for lighting, more of which anon.

If you intend to run normal 240 volt AC appliances from a DC system, you will need an *inverter,* which converts DC to AC. Unfortunately, these little beauties cost about $1 per watt rating for a cheap one, so if you ever want to run a small electric drill or a food mixer you are up for $500 or better.

There are cheaper ways of going broke!

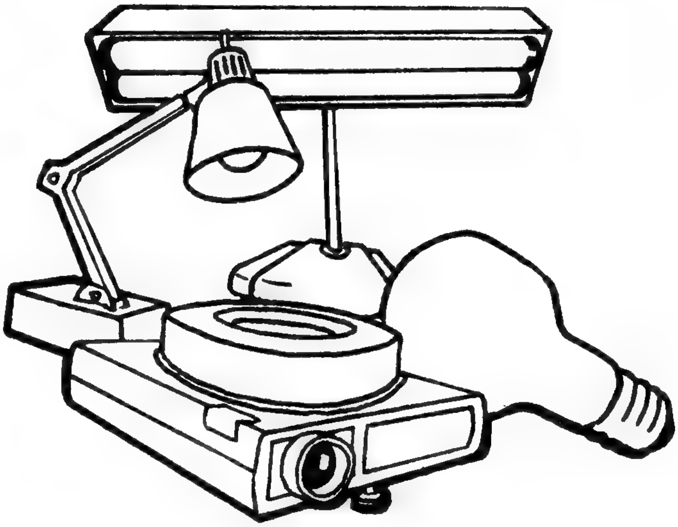
So what's the alternative? Does it mean that we must put up with running a generator every time we need a light? Not so. Unfortunately, you cannot store raw AC. But by using a battery charger, which converts AC to DC, we can store some of the generated energy.

You store a small amount, just enough for lights, in a small battery, probably a car battery, and run the generator only when you need to use an appliance.

The usual 240 volt AC appliances, the ones we use when we are connected to electricity mains, will generally run from an *alternator.* I say generally, because there are some that are not suitable — not because of any difference in the type of electricity, but because of the difficulty of *starting* certain appliances. These are the types that are run by *induction motors.* Such machines as refrigerators, washing machines and fixed power tools are of this type.

Electric drills, food mixers, vacuum cleaners and most portable tools are not run by induction motors and will run quite happily from a small AC generator, provided it is rated at 750 watt or better.

The trouble with induction motors is that they take a lot of power to start, but only a little power to run. For example, a refrigerator might run on 300 watt quite happily, but will require 3000 watt for a few seconds to start it. Small homestead generators will not give that sort of surge power without blowing their little brains and it is usually not economical to buy the bigger generator unless you intend to use considerable electricity, or have two dozen nappies to wash each day.



Anyway, running a refrigerator from a home generating plant is out of the question (as Joseph Smith pointed out), unless you have a small hydro-electric scheme running in your property.

My alternative suggestion for a homestead system is this:

Determine what appliances you are going to *need* to run together. Most of the time you will find that you can get away with only one appliance at a time. For example, you don't really have to run that power drill at the same time as the food mixer.

Then select a generator of 240 volt AC rated at a little higher than the wattage of the biggest appliances to be put together. Usually 1000 to 5000 watt will be adequate.

Next, buy your alternator. Most modern alternators come equipped with battery charging capacity (12 volt DC) as well as a couple of three-pin plugs for 240 volt AC. You might as well get one that has both — it really costs no more.

When you go to buy the unit, the salesman will ask: "Diesel or petrol?" Here's the difference: diesel engines are more efficient than petrol, they burn a cheaper fuel and usually last longer. *But* they usually cost two or three times as much as an equivalent petrol engine. Where the price difference is about $1000 (a 1000 watt set), you might decide that you can buy an awful lot of petrol for the money. I did!

Also, diesels don't like running on low load. They are really not suitable unless you plan to run them fairly constantly at near full load. The decision depends on the circumstances but it is fair to say that after five to 10 years the total cost (capital plus running costs) will probably be the same for both systems. *There really are no free meals.*

Right. Now about lighting without thumping generators. I suggest that you get the set with the 12-volt outlet. If you are going to have the set running near the house (up against a wall in fact) you will be able to charge a battery using the 12-volt outlet and run house lights from the battery.

For 12 volt you really must have short runs of cable if the lights are going to glow more than dull red or if you don't want to spend a fortune putting in really heavy duty cables.

The generator next to the house is not really a viable solution if you don't like the noise and exhaust smell. Put it 100 feet or so away in a nice pise house to itself and it will be much quieter and less smelly.

However, this means that you can't charge your battery from the 12-volt outlet. Never fear. For $50 you can buy a battery charger that is silent and can be installed in the house (in a cupboard if you like).

The size of the charger is important. If you plan to use the battery every night for lights and only run the generator once a week, you will need to get one that will charge the battery in, say, three or four hours. This means that you will be using quite a proportion of the generator's capacity just to charge the battery and you won't be able to run appliances while the battery is charging — a condition leading to waste of fuel and impatience.

Even this problem can be overcome. There is a nifty little box available which will switch off the charger automatically as soon as the generator starts being overloaded and switches it on again when it is safe to do so. This ensures that the battery is charged during these times when the generator would, otherwise, be unloaded and wasting energy.

So, when you want to run an appliance, you start the generator and automatically top up the battery charge in the idle periods or whenever the appliance load is low enough. More details of this nifty little box may be obtained from **Metl-Craft Pty Ltd, PO Box 31, Swifts Creek, Victoria 3896.**

COST

Now to some costing for a home generator system. The prices assume a 1000 watt generator. For bigger machines prices will be higher.

	Petrol	Diesel
240 volt AC generator	$300-$500	$1000-$1500
Running costs (about half load)	$0.20 per hour	$0.15 per hour
Life expectancy (motor to first overhaul	2000 hour	20,000 hour
Maintenance difficulty	like a lawnmower	specialised
Motor replacement cost	$100-$150	$600-$1000
Battery (say 100 amp hour 12 volt)	$60-$90	
Cables, switches, outlets, etc	$200-$300	

You can see from the table that a petrol generator, even a cheap one, can be a good proposition. For the difference in price between a cheap petrol machine and a heavy duty diesel, you can buy an awful lot of petrol and do a lot of replacements or repairs.

Lighting

Now about lighting with 12 volts. First, as I said earlier, cables must be *short.* If you limit globe size to say, 50 watt, ordinary power point household cable (240 volt, 15 or 20 amp) will do well without losing efficiency.

There is nothing wrong with motor car lamps for house lighting. They tend to be glary and throw sharp shadows. So does the sun, so what? With a little self-sufficient ingenuity you can make shades for them which will spread the light. The lamps are cheap and long-lasting.

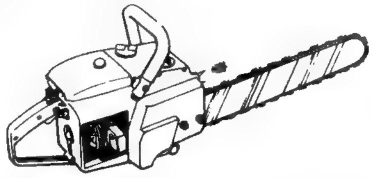
If you are pernickety, you can buy conventional bayonet cap 12 volt globes from some places, though you may have to shop around. These fit the normal light fitting which works for 240 volt AC.

A word of warning: don't try to save money by running one set of cables only and changing globes from 240 volt to 12 volt, or vice versa as required. You'll kill somebody, or burn the house down one day. Keep separate voltages strictly separated.

Good luck and good lighting, or as the Americans say: "More power to you".

Metl-Craft Pty Ltd can also provide a cheap consulting service for anyone wanting to set up small power systems and not having either the required knowledge or friends.

CHAIN SAWS



With chain saws you get what you pay for. The dearer ones last longer, work better and start easier. Ours is a **Stihl 08 S** with 17in bar, used for clearing, cleaning up, firewood cutting and fence making. Unless you live in a cleared block (cheating!) it is probably the most versatile power tool.

This chain saw will fell a tree two foot in diameter if you have the courage. I have sometimes wished for some more power while cutting dry grey box, but not too often.

If instructions in the manufacturer's manual are followed fairly closely, the machine will give many years of service. In two years we have gone through a couple of chains and one bar is nearing the end of its life — mainly through our carelessness.

Attachments, such as posthole auger, brush cutter and steel cutter are available, but they are just as cheap bought as separate machines with their own motor.

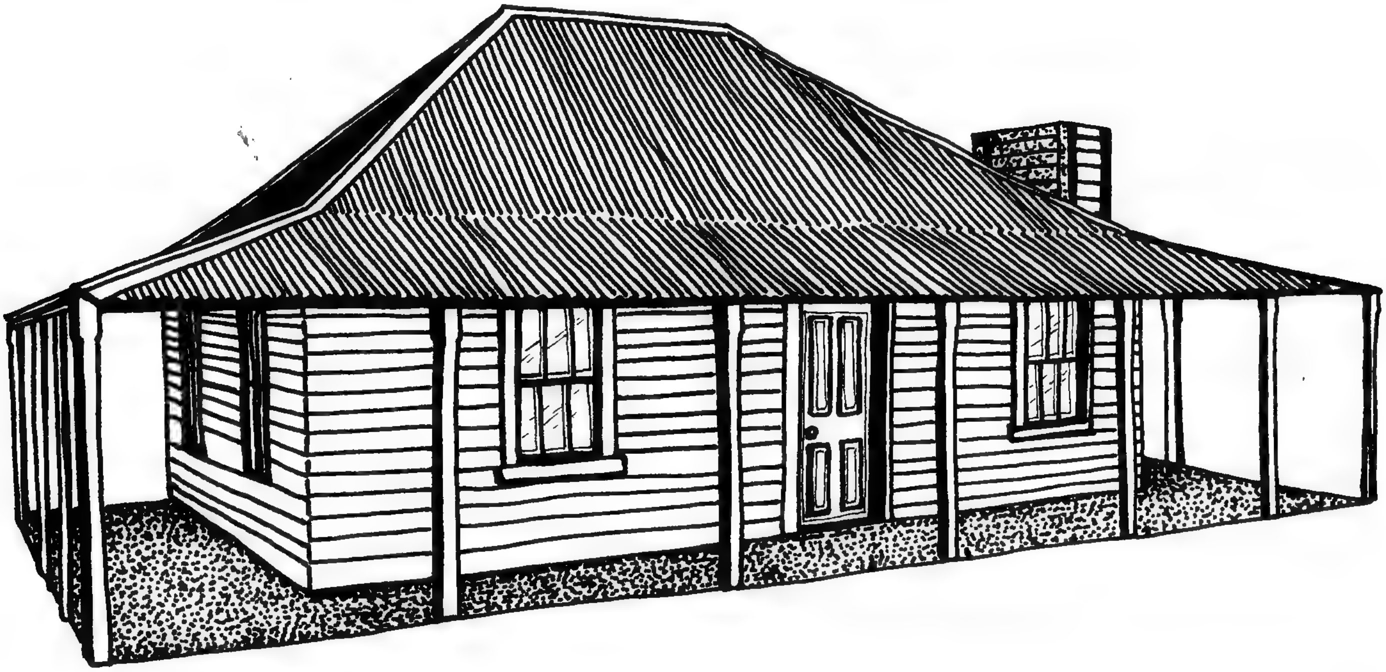
Sharpening chain saws

Sharpening your own chain saw is not difficult after a little practice and saves a lot of money — apart from the fact that you will find the saw blunt at the most inconvenient moment, when a trip into town to get it sharpened is a hassle.

Electric saw sharpeners are far too expensive and some others are too fiddly. The best we have found is one made by **Oregon,** which is a pressed metal slide which clamps onto the sharpening file and gives an indication of the angle of cut. Take care that the slide is the correct one for the size of file or the settings will be all wrong.

Mario Zolin.

Recycling



A house painted with sump oil. A green-painted roof is good in cool areas. Silver reflects better in hot places.

Sump Oil and other stories

By Max Strong

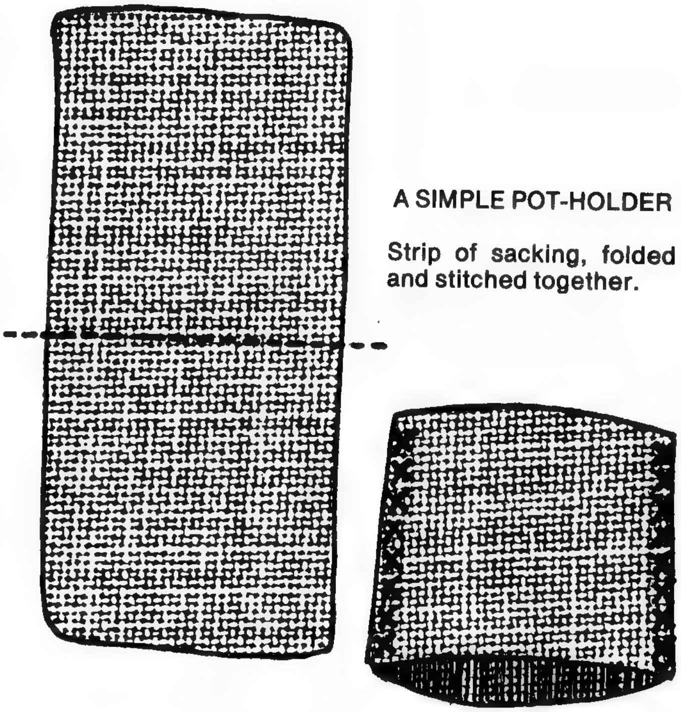
A great deal has been written about recycling things and I guess it's almost old hat (old hat — don't throw it away, it can be used as a nest for chooks!) to say to everyone *please, please* try to seek out ways to recycle things that you use on your farms and in your homes.

If the things you use produce wastes which can't be recycled, look around for substitutes, or even try to do without the "things" altogether.

Books and university lectures first told me that affluence went hand-in-hand with waste. Galbraith and Toffler told me frightening stories about how cars are made to fall apart within five years and how large companies have bought up the patents for steam cars and long-life tyres in order *not* to produce them, because they are too efficient.

However, at the time, I continued to produce quite a heap of rubbish myself, seemingly oblivious to the idea that *I the consumer* was really at the root of the pollution problem. Gradually some light entered our thick skulls and we began to sort out our garbage — to recycle organic materials through the vegetable garden, to pass on old books in order that a few trees could be saved, to wear only second-hand clothes and to ask shopkeepers not to wrap things up so much.

Nowadays I live on a farm and I have learnt this: voluntary simplicity (you can interpret this as material



A SIMPLE POT-HOLDER

Strip of sacking, folded and stitched together.

poverty if you like) is the only way to *really* recycle things properly. To some extent, in terms of material possessions, I have become a poor man since moving to the country. Funny, isn't it, that I am happier now, than I have ever been? But what I am saying is no joke. If you are poor you jolly well have to learn about junk, that is using the throwaways of the affluent society.

Bear with me now, I am coming to the practical part soon. It's just that I see so many people who accept alternative lifestyles only as some kind of hobby — and agree with recycling in theory but are terrible litterbugs in practice.

Practical ideas — tah rah!

Waste sump oil — usually available free from garages — can be used to: paint houses, fences, chicken coops, all timber. The oil gives a creosote appearance, minus the offensive smell. Sump oil protects timber against dry rot, wet rot and white ants. Coat all posts with sump oil before sinking them in the ground. This will double the life of whatever you're building.

Waste sump oil — can be used in a solar collector to increase the rate of absorption of sun-rays and to help the siphon-recycling of water through the collector due to convection.

Waste sump oil — can be sprayed on weeds and on pigs which are trying to kill each other (it kills the scent of a new pig in the pen, so the other pigs will accept the new pig).

- Waste paper — can be dug into the garden as mulch.
- Similarly, waste sacking can be used to insulate a garden (like black plastic) and to check weed growth.
- Human excreta often sprouts tomato bushes or passionfruit vines when left in appropriate places after appropriate meals.
- Human bums should not be wiped out with toilet paper but should be washed with water.
- Scraps of material can be sewn into rugs or into a pot-holder for the hot-pot which comes off your wood fuel stove, which, of course, is run on scrap timber.

RUBBER BANDS

By Peter Kastelein

One idea for recycled material in which *Earth Gardeners* may be interested is quite simple, costs nothing, anyone can make it and most people have occasional use for it.

I am referring to rubber bands (loops) cut out of old car or truck tyre tubes and looped together to the length required.

They may be used as ties on car roof-racks and roof bars and on trailers in place of octopus straps. Rubber bands have an advantage over rope in that they will maintain constant flexible pressure instead of loosening (as ropes do).

Commercial octopus straps are rather weak and could cause accidents with their metal hooks flying around if accidentally released or broken.

The strength of rubber tie straps is determined by their width and whether you take them from car or truck tubes. Each loop representing a link can become a terminal with any unused length lightly tensioned back to any protruding bar or frame.

I have been using rubber straps for many years on roof-racks, tying unweildly loads, such as camping gear, or even down to a single fishing rod. But, even though it does not cost anything, most people are not interested enough to make some up for their own use. Any tyre workshop has tons of them to give away.

FUEL SAVER

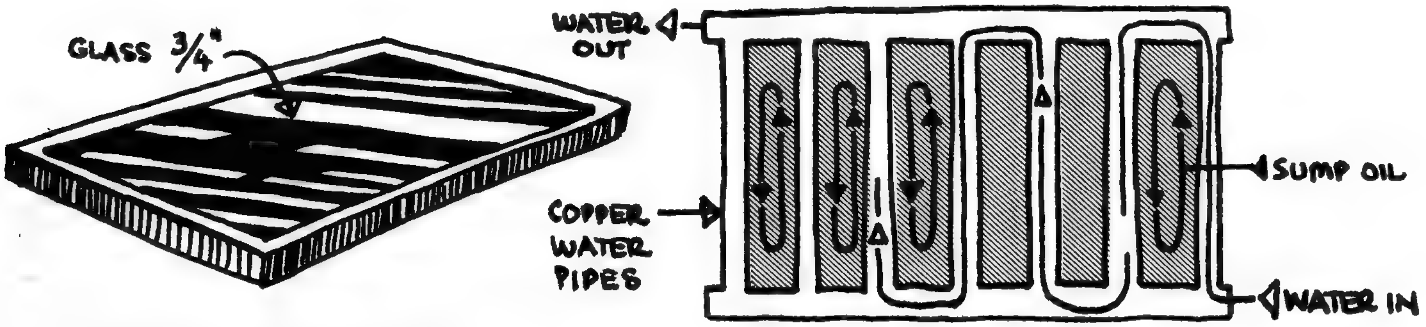
By Marjorie Spear

Put into a wide-mouthed thermos flask one cupful of raw grain, for example wheat, to four cups of boiling water, about 12 hours before you wish to eat it.

The water is strained off (to the garden) and the grain is delicious for breakfast on a cold morning with honey or sultanas.

The grains can also be eaten cold. Rice comes out a bit mushy.

SUMP-OIL SOLAR COLLECTOR



Case filled with sump oil. Some space is left for expansion and contraction.

Sump oil rises and falls by convection and passes heat to water by conduction.
Warm water rises due to convection.
cf. CSIRO research bulletins

CANBERRA, ACT

By Frances Cummins

After being weaned off chemicals about 15 years ago, and having experienced gardening conditions in two of the world's most contrasting areas, we now enjoy our first-class products in Australia's "super-city" — Canberra.

Apart from its short growing season, this is a perfect place. In spring we have had frost in early November and we can be sure of cold nights before the end of March; so it's "grow as much as you can as fast as you can", bottling, drying and freezing any excess.

We are fortunate in having a half acre block and visitors are astounded that such a haven exists within walking distance of one of the city's major shopping and administrative centres.

After moving in we discovered that the previous owner was also an organic gardener. He laid excellent foundations. Now, after 12 years of growth we have beautiful trees for shade and privacy and we benefit from his enormous effort in creating large raised vegetable gardens, retained by attractive stone walls.

There were also two king-sized compost bins. Being keen, the previous gardener took the contents with him. Also being keen, we brought our semi-matured stuff with us!

Our own areas of grass yield a yard of clippings every fortnight in the warmer weather. This is great for heating the compost. We have another block out-of-town which we are developing and here we pick up garbage cans full of cow manure from stock which we allow neighbours to graze.

We also get sand for layering, and wood ash from our efforts to clean up rubbish dumped by a flood.

From our family of six there is a fair collection of peelings, vacuum cleaner dust and shredded paper every day. Some other scraps are recycled through the dog and the hens. Now and then sewing and mending scraps go in too.

It's not too much effort to chop them roughly as you finish a job.

A relative who owns a large bookbinding business supplies a bag of paper dust every few weeks while a non-gardening friend delivers a trailer full of grass clippings from time to time because our place is closer than the tip.

The butcher will sweep his sawdust into my bin if I'm there at midday on Saturday and then there are the sweepings from paths and verandahs.

Finally, we never put out a trash can. One reason is that we don't have much rubbish and the other is that we like to take our own containers to the tip and bring them back full of discarded sawdust, grass clippings and other composting materials.

The result of all this is a quick maturing and extremely wormy compost. I neglected to say that we add lime now and then. The little from the hen house is not usually added, but used as garden mulch.

By November each year we are eating fresh silver beet, peas, sprouts, broccoli, radish and strawberries, along with lemons, oranges and gooseberries. The next month we have lettuce, onions, carrots, potatoes and currants.

As the season progresses we add corn, tomatoes, cucumbers, dwarf and climbing beans, capsicum, raspberries, stone fruit and grapes. There are always herbs ready to use and eggs in one quantity or another.

We think fowls are essential. Even when we only had two, on a much smaller block than we have now, their contribution of manure and mulching materials was well worthwhile.

Three of our children with a lettuce.

This is not an area that a gardener would seek, but when a family comes because of business or educational opportunities, they learn to live with the difficulties.

A typical winter is long and dry and very cold, with cutting wind from the snowfields. The surrounding countryside varies from virgin bush to century-old sheep and wheat stations. The soil, in our part of the city at least, is shaley. We can see its natural composition by stepping out our back gate on to the hill. I doubt whether vegetables could be grown on the soil in its original state.

When we began, the gardens were partly filled with bought soil and compost and we have continued the process to the point where most of the beds are level with the retaining walls and some have reached the "no dig" stage.

Reptiles and echidna revel in the naturalised area outside the gate — two of the younger children were scared almost out of their wits by the largest brown snake I have ever seen. The lizards are far more acceptable.

Normally the summer is hot and dry, punctuated by fierce electrical storms which temporarily reduce the temperature and bring unbelievable flushes of growth to the garden. Fortunately, the Canberra water supply is good and this is vital in months such as February, when there may be no rain at all. Our artificial lake in the centre of the city, named after the architect Walter Burley Griffin, is a restful and beautiful oasis.

It would be unreal to suggest that a family of our size could be completely self-sufficient in this climate and on a property this size, yet our output and enjoyment is tremendous.

My husband is the wage-earner, working at A.N.U. When we decided to buy this property, I decided I could contribute more to the family by resigning from my part-time, well paid position.

I planned to develop the garden to the fullest possible extent. Being at home also meant a complete saving on child care fees and considerable economy in having more time for food preparation and the making and upkeep of clothing.

There is time, too, for more practical participation in the affairs of the children's schools. All that I do now is worthwhile and this is the greatest motivation that anyone can have.

I wish that all mothers could have the experience of something similar to what our relatives call our "mini farm". Here, between the hot air from politicians and the cold air from the Snowy Mountains, it's an insulation against inflation, food shortage and bad nerves.

Bush babies

JOEY FORMULA

By Iris Anderson

This is the formula that I have had most success with in rearing almost 6000 joeys in the past 29 years.

10 oz warm boiled water

1 slightly heaped tablespoon full cream powdered milk

3 drops Pentavite

2 drops Vitamin E

If the joey is well furred it should be given ½ to 1 oz of formula every four hours. I find the little one will take to the bottle at once if firmly cuddled as you would hold a baby (wrapped up snug). Then cover the eyes with one hand as they are not afraid if they cannot see. You should hold your hand also over the joey's mouth to keep it shut after you put the teat first in the side of the mouth and then bring it to the front.

A piece of bicycle valve rubber inserted in a baby's feeding bottle in the teat will simulate the mother kangaroo's teat. An ordinary baby bottle teat would be too big.

Do not over-feed the joey on formula as it will cause it to scour. Try to get the animal to eat grass, soft bread, rose leaves, fruit tree leaves, loquat leaves (all young and tender), grated apple, grated carrot, dried breakfast cereals and dry flaked oats. Make sure the roses or fruit trees haven't been sprayed. We never use sprays at all.

When the joey is used to the changeover diet from the mother's milk, I include ½ teaspoon of Irradol A in the milk formula.

If the joey does scour, I burn some plain flour in the oven and mix 1 teaspoon to the 1 oz formula. Strain it through a tea strainer or it will clog the teat.

My Bush Babies

Iris Anderson, with Dennis Hancock, Macmillan, Melbourne, 1977, 127 pages, $9.95.

Gerald Durrell got a shock when he walked into Iris Anderson's suburban home in Perth. "On every chair and indeed in every place where they could be hung", he says in the Foreword to *My Bush Babies,* "were endless pullovers with their bottoms sewn up and their arms knotted together.

"Peering out of the neckholes were the wistful and engaging faces of innumerable kangaroos and wallabies, nearly all of them orphans — their parents having been victims of hit-and-run drivers."

This sets the scene for Iris Anderson's stories of her adventures in being 'mother' and 'nurse' to a wide variety of orphaned and abandoned animals in Western Australia. She eventually moved to Denmark, where she runs the Injured Wildlife Centre, and she was awarded the BEM in 1971 for her services in preserving fauna.

There are humourous stories and sad stories about kangaroos, euros, galahs, guinea pigs, a rat named Yvonne, emus, echidnas, goats, kookaburras, possums and emus. Anybody who cares for animals, especially the native Australian variety, will appreciate this book. We thank Iris Anderson for sending us her formula for feeding young kangaroo joeys.

SOURCE: Bookshops, or post free from The Macmillan Co, 107 Moray Street, South Melbourne, Victoria, 3205.

Friends of the Earth

Friends of the Earth is active in Mexico, Spain, the United Kingdom, France, Sweden, West Germany, Yugoslavia, New Zealand, Canada, Ireland, El Salvador, Holland, Belgium, Italy and the United States.

Not all groups follow the decentralised, autonomous group model favoured by Australia. Britain and the US, for example, have highly structured and hierarchial organisations — very effective in their own countries.

Australian groups (about 17 in Victoria, 30 in NSW and two or three in other States) are active in many areas: Antarctica, whales, wilderness, transport, uranium (a big issue), alternative technologies, land rights, woodchipping and many more.

Like all similar groups, we need people, money and help that you can give. We put our courage where our convictions are and we need your support.

Membership is $10.00 a year, or any sum that you can afford. Send it to your local FOE group.

Melbourne: Victorian Resource Centre, 366 Smith Street, Collingwood, Victoria, 3066.

Sydney: 232 Castlereagh Street, Sydney, NSW, 2000.

Darwin: PO Box 2120, Darwin, NT, 5794.

Adelaide: 310 Angas Street, Adelaide, SA, 5000.

Perth: C/- The Environmental Centre, 537 Wellington Street, Perth, WA, 6000.

Brisbane: West End Resource Centre, 75B Vulture Street, West End (mail to PO Box 667, South Brisbane, Qld, 4101).

Popeye, from Chain Reaction, Vol 5, No 2, the "special gourmet issue". Subscription to Chain Reaction is $5.00 a year.

By Dion Ellis & Andrea Morgan
FOE Melbourne

Friends of the Earth is the name of our organisation and also a good description of the type of people who make it what it has become — a name synonymous with vocal, rational, uncompromising views on the environmental crisis that besets the whole world.

FOE is active in 16 different countries, each branch having its own characteristic modes of operation and organisation. Although the concern of the various groups often takes different forms, their basic philosophy is always the same *"there is only one earth — look after it"*.

Trying to look after our own area of the Planet (and help others when the need arises) requires a great deal of work and dedication on the part of many people. Australia is fortunate in having some of the most active, effective and radical FOE groups.

We think the chief reason for our effectiveness (and the cause of our proudly worn radical tag) is our common sense. Environmental disasters that occur, matter-of-factly, right under the noses of the victims, are obviously more than a physical emergency. These problems have their origin in the political and social fabric of our culture; FOE and its campaigns reflecting our recognition of this.

We fight with information and initiative, showing people alternatives to the prevailing destructive patterns of living; patterns characterised by the fear, greed and suspicion which divide and alienate people from each other and the earth.

A look at the basis on which we conduct our anti-uranium campaign will serve as a good illustration of our analysis (and our alternatives) in action.

The Australian media would like us to believe that the most significant danger from the nuclear fuel cycle is unmanageable wastes. This is reducing the environmental problem to a technical "hitch" while, clearly, what is at issue is so much more than just a technical problem.

The following are seen as intrinsically related environmental concerns of the first degree to which we draw attention:

(a) A society dependent on massive, centralised power stations is necessarily repressive of freedom. It cannot tolerate strikes, sabotage or natural disasters. The result would inevitably be a police state.

(b) Likewise, reactor-based economies lend themselves to weapons proliferation — more police — more danger of war.

(c) Nuclear reactors are *completely unnecessary* as a source of power. Further they are using up vital capital that is needed to finance alternatives (less profitably too).

(d) The methods being employed to establish a market for our uranium and for nuclear reactors themselves are ethically disgusting. The (absurd) end does not justify the means.

(e) Aboriginal people, once again, are being exploited — this time to "save the world from freezing in the dark". An already decimated race, their final destruction will be a formality if uranium mining goes ahead in the Northern Territory.

(f) The capital intensive nature of the uranium mining industry actually destroys jobs, to the extent of *thousands* per reactor built.

There are of course many more and equally important facets to the nuclear power problem, but these are enough to show that our concept of *"environmentally unsound"* takes into account the psychological and social effects a nuclear economy would have on the citizens it is supposed to serve.

For this reason our campaign aims at involving common people from all classes. We work with all kinds of citizens' action groups, from unions to bird-watchers.

The biggest single environmental problem that faces our society is the feeling of powerlessness and self-denigration that manifests itself in the people that see (but don't want to see) the damage being done in their name. These feelings are socially and politically reinforced. An intrinsic part of our campaign, then, is our willingness to take direct action, that is *to take responsibility for ourselves*.

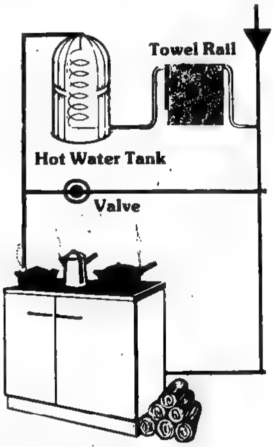
This is therapeutic for us, the people who understand the situation, and those who take heart from our initiative. We are showing others that we are capable of controlling our own lives and that environment is just that — *ours*.

A further example of our ideas in practice can be taken from our organisational structure itself. Bureacuracy and hierarchy are dirty words around FOE, to such an extent that fear of becoming so has paralysed us on more than one occasion! Each group in Australia decides its own structure and *modus operandi*. We are a collection of autonomous groups, each working on its own area and projects, though whales, uranium and alternatives are common ground for most of us.

Our loose structure does have many shortcomings, but we do continue to function, proving that action through concensus is both possible and enjoyable. We therefore continue to attract, and benefit from, the involvement of intelligent, compassionate, imaginative and dedicated people — in other words, human beings.

We look forward to a time when people take responsibility for their action (and inaction). When we act together in a co-operative and cohesive manner we can have a greater effect than by taking action as individuals. We are trying to put the word *community* back into common usage. Alienation, isolation and competition have reached the stages of a disease in western society.

Its effects are increasingly barren people and increasingly barren landscapes. *Friends of the Earth* are trying to tackle both.

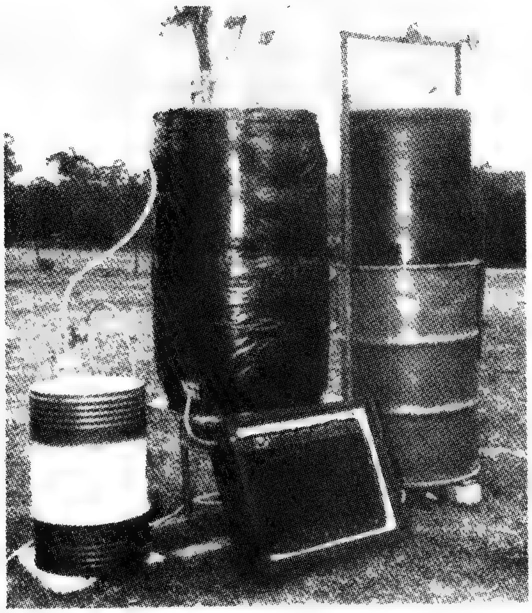


FRANCO BELGE

Central heating cookers
Hearth & Hob, 109 Main Street,
Pakenham,
Victoria 3810.

From France, the **Franco Belge** combines a wood or coal cooking range with a central heating system of up to 15 radiators and piping hot water. They have a "whole-top" hotplate, with an oven for roasting and baking to 232°C (450°F) and a second oven (or warming drawer) with temperatures up to 160°C (260°F).

See: **Wood heat,** EG19, pages 16-24 and **Wood heat feedback**, EG20, pages 32-33 for more details of wood heaters and cookers.



METHANE CH_4

The replaceable energy, Raymond F. Spargo, Australian Methane Gas Research, Tomerong, NSW, 1979, 96 page paperback. $8.95.

While we were complaining, in *Methane Basics* (Access 2 — EG25), that there was too much *talk* and not enough *do* involved in producing bio-gas, Raymond Spargo was at work on a small, cheap generator which most handy people should be able to build.

Full instructions for building his SAM Vertical, twin-chamber unit from two oil drums and odds and ends are included in *Methane* CH_4 as well as plans for making a solar panel (from a car radiator) to heat the slurry. Welding is a required skill for the builder.

Spargo says the generator is "a working miniature of a full siz unit and introduces one into a step by step study and operation of the practical requirements for methane production . . . it's definitely no toy, but a project from which to gain valuable knowledge about anaerobic digestion and solar energy".

Under correct working conditions, the unit will yield around 8 cubic feet of gas and one gallon of liquid fertiliser daily. That's not a lot, but, says Spargo, "That's enough gas to cook a meal or run a gas light for about two hours and sufficient fertiliser for the larger than normal home vegetable garden".

With this prototype bio-gas producer, you can learn the basic system before outlaying larger amounts of money on a bigger plant. We hear that SAM units are already beginning to dot the rural areas.

Farmers with animal manures to dispose of, especially pig farmers, will have the raw materials ready at hand to fuel their gas plant.

The rest of the book lays down solidly the background and theory of gas energy, with 100 photos and diagrams. Most gas appliances, such as stoves, may be easily adapted to run on methane. Safety precautions are stressed and explained.

The future again looks bright for home-made gas.

SOURCE: Bookshops, or by mail from Australian Methane Gas Research, Tomerong, NSW, 2540 (add $1.05 for postage).

Sun-powered organ

On an island off the coast of Queensland, Edward McMahon is able to play his electric organ, listen to hi-fi records, watch television and run small appliances — all from power supplied by solar cells.

BY EDWARD McMAHON

The solar electric system we have here on Macleay Island, Queensland, is made up of eight panels, each 40 cm x 40 cm mounted in a frame of two rows of four panels.

The frame is built like a louvre window, with a pivot point at either end. This allows the panels to be tilted to catch the morning sun and then to be automatically moved about 9° every half hour — thus tracking 180° from morning to late afternoon over a 10-hour period.

An old, eight day pendulum clock, with the hourly striking mechanism removed and modified to operate a micro switch every half hour, provides a basis of pulse to operate any number of panels required.

The panel is weighed by a pulley and cord and held by an escapement which is released one notch every half hour by a solenoid. When the weight reaches its limit of travel for the day, a switch is closed and operates a small motor which returns the panel and weight back to the morning position.

Given a full day of sun, with a cloudless sky, the panel will produce 28 volts with a continuous 1.8 amp average input ot the storage batteries.

Macleay Island is just a little south-east of Brisbane. The sun here in mid-winter has a low angle of about 28° and in summer 88°, so the louvred panels are moved by hand about once a month to correct this condition.

There are 12 two volt, 200 amp hour batteries, connected in series to supply 24 volts, which is used for lighting.

A sine wave inverter running off the 24 volts supplies 240 volt AC at 250 watts for the electronic organ, hi-fi record player, electric drills and soldering iron. These are not all used at once of course, though it could be done at considerable cost. One learns quickly to cope with this situation.

Once a week we use a petrol-driven motor alternator to power the washing machine and electric iron. The washer could be converted to 24 volt DC. Low voltage DC irons were used on outback farms several years ago — perhaps they may yet stage a comeback?

The colour television set is a portable 12 volt DC and 240 volt AC National, series TC 2000. We used to have a 26 in Siemens with remote control, but we found that this set drew too much current.

After an hour's viewing of the portable screen we quickly became used to the smaller set. We simply view it closer and besides, it has a clearer picture. The television is on most evenings for about four or five hours.

I have built a solar hot water system. The heater panel has an area of about 50 ins x 40 ins and feeds a standard 40 gallons storage tank, with additional insulation. This supplies more than enough hot water, at least for a small family.

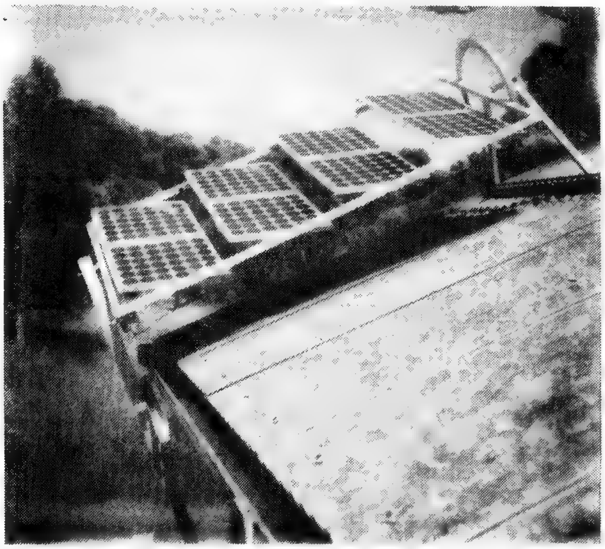
I have now put together a small methane plant, made of four 44 gallon drums, working on a single batch principal.

Unfortunately, the books I have read on bio-gas concentrate on animal manures. We have only a small quantity of fowl manure here, so I use mainly noxious weeds, rotten paw-paws, vegetable garden waste and kitchen vegetable peelings.

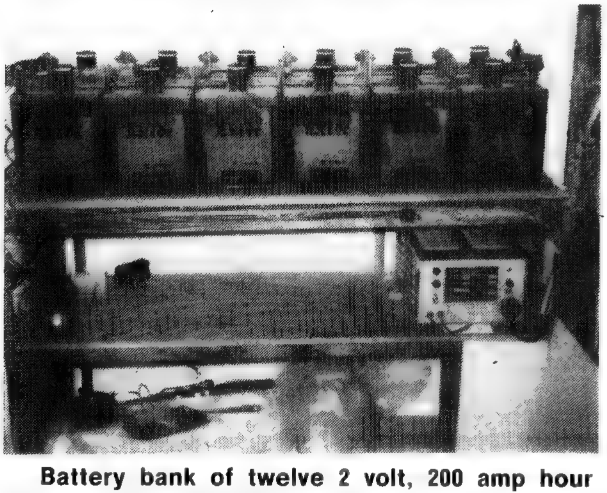
This gives us good gas, if only in a small quantity. It runs a small engine but only for a short time. I am planning a larger, continuous-feed digester later this year, so, you see, we are well on the way to self-sufficiency.

If anyone is keenly interested in these alternative energy systems, I would be only too glad to help them.

Edward J. McMahon, Macleay Island, Queensland 4165.



Position of the solar cell tracker panel at 1.30 pm on January 27, 1980.



Battery bank of twelve 2 volt, 200 amp hour batteries. At right bottom, the sine wave inverter.

ORGANIC EASTER SCHOOL

At Kiewa Valley, not far from Wodonga, Victoria, will be held on the Easter weekend, April 4-7 on the property of Mr Geoff Wallace.

For particulars, please send SAE to RMB 1059A, Wodonga, Victoria, 3690.

BY IAN FIEDLER

The Organic Easter School is now in its sixth year. Anyone who has attended in past years can attest to the great time had by all spent camping on the banks of the Kiewa River.

The format for the weekend will be an informal examination of aspects of alternative lifestyles in lectures, workshops and demonstrations.

There will be sessions on broadacre organic farming, fish farming, herbs, beekeeping, alternative health care, care of livestock and domestic animals. There will be an organic produce stall.

The school is run by the Kiewa Valley Organic Society and is run on a non-profit basis with a small fee charged to cover costs, such as fares for speakers.

It is held on Geoff Wallace's farm, basically an organic beef raising property, which is becoming more diversified as tree crops are planted and more annual cropping, for home use and for sale, is undertaken.

There hasn't been any artifical fertiliser or pesticide usage on the property for the past 25 years. Geoff Wallace has built up a wealth of knowledge and practical experience in a long search for better methods of land use.

The farm has an extensive Keyline dam and irrigation channel system. The emphasis is to retain as much of the natural environment as possible with a balance of native predators and other beneficial natural populations.

Geoff will demonstrate his *Soil Conditioner,* a machine which aerates and loosens pasture, or prepares a seedbed for crops. The machine does not invert the soil or bury organic materials, or expose the subsoil to the harmful effects of drying and sunlight.

Four hundred people were here for the Easter weekend last year. We hope this may have inspired you to come along.

* * *

ORGANIC '80

Will be held on the (Tasmanian) long weekend of March 1 to 3 at the Huon Showground, Ranelagh, Tasmania. There will be workshops, lectures and demonstrations, with caravan and camping facilities available.

For further information, send SAE to the sponsors, The Organic Gardening & Farming Society of Tasmania, PO Deloraine, Tasmania, 7306.

* * *

Fruit tree Nursery

Bob Magnus' Fruit Tree Nursery, Pearces Creek, Wollongbar, NSW. Open to "personal shoppers" only — definitely no mail order.

A wide range of fruit trees, rare, tropical, hard to get and suited for the Northern Rivers district of NSW.

IN THE WET

By Marjorie Spear

John Fielder's article *In the tropics* in Access 1 (EG22-3) invites helpful suggestions.

Like me, John Fielder grows organically, and though his soil is a bit different, we both have a clay problem and 'wet feet' in the tropical summer.

I agree with moulding up a large heap of topsoil for fruit trees, but if your topsoil is sadly depleted (as mine was and still is) you have to mound up with large quantities of vegetable matter which will break down to form compost. Animal manure should be used if available, with vegetable matter, such as grass, twigs, etc.

I can recommend Ceylon spinach *(Basella alba)* for the wet summer, which will grow all through the summer and with little care produce a succession of tender green leaves.

These can be eaten raw or cooked. It is grown a lot in Papua New Guinea and prefers a bit of shade. It produces abundant seed which makes an excellent dye for foodstuffs or clothes.

Chokos thrive all through the year but do best with some rain in summer. They need fertility and support and can be eaten either raw or cooked.

I also grow successfully in the wet various varieties of beans, such as the winged bean and the sword bean, soy bean and mung bean for sprouting, also taros and yams, which need to be cooked.

It is important in the tropics that we grow these plants that can withstand pests. When I grow temperate climate vegetables like lettuce and tomatoes, I find the herbs that grow in the tropics, like basil and marigolds, are useful for companion planting. A garlic spray can also be a help.

I add to John's list of fruit trees which can stand wet feet: mulberry, bananas, cocoanuts. I have growing here some 30 other named tropical fruit trees, but they need more love and attention.

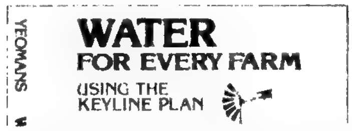
I recommend growing bamboo. It is excellent for making a trellis. Cut when the moon is waning. I have not tried eating the shoots.

* * *

Tablelands Permaculture Group

C/- Bud Driver, Malanda, Qld, 4885. Meets monthly.

* * *

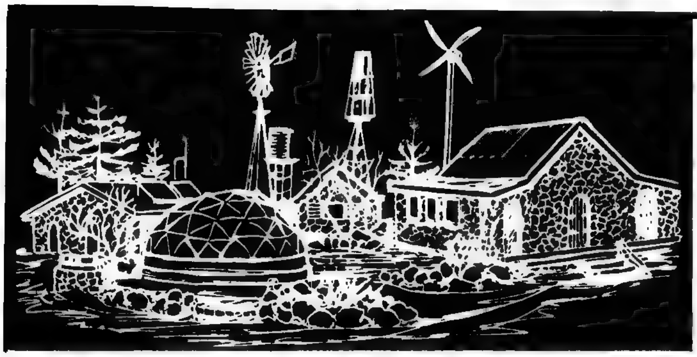


Using the keyline plan, P. A. Yeomans, Murray Publishing, Sydney, 1979, 247 pages, hardback.

Two classic works by P. A. Yeomans on keyline water conservation and planning are put together in this one volume, with diagrams and photographs of irrigation in arid areas. Recommended.

SOURCE: This book has been remaindered and is on sale at a variety of prices. The best price we have seen is $7.95 (plus postage of $1) from *Compendium,* PO Box 391, Milsons Point, NSW, 2061.

ACCESS



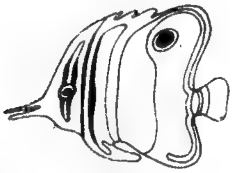
SUN POWERED EUKEY COMPLEX

Storm King Dam Road Near Stanthorpe, Qld
Phone: (076) 83 7156.

Ruth Cilento's centre at Eukey is a showplace for all sorts of alternative energy and building techniques. You can see a bark and slab hut, a granite house with a craft shop and art gallery and a herb house which has solar shutters and a bottle wall.

In the geodesic dome are working models of a vacuum cleaner run on solar cells, reflecting parabolic solar cooker, sundial, Telkes "hot-box" solar oven, solar water heater, food dryer and fresnel lens.

There's a traditional wind-pump, a Dunlite wind electric generator, a Savonius wind rotor and a charcoal gas-producer. Children under 10 years may ride sun-charged battery-powered tricycles. There's a bookshop and the **Solar Plexus** for natural foods and juices. Worth seeing!



ENVIRONMENT ACTION CENTRE

118 Errol Street
North Melbourne, Vic, 3051

The Centre has a range of educational resources for use by schools, environment and other groups with facilities for campaigning, including silk-screen, layout room and a bookshop (formerly Patchwork Books).

Send two 24 cent stamps for a catalogue covering audio-visual slide kits and 16 mm films for hire on subjects like solar energy, forestry/woodchipping, recycling, uranium mining, Cape York Peninsula and the Barrier Reef. There is a 10 per cent discount for schools and libraries.

ECOLET

The Mullbank *Ecolet* biological toilet *(Access 1* (EG22-3), page 240) is available in Tasmania from Terry & Marilyn Wilson, 411 Main Rd, Glenorchy, 7010.

NATIONAL CENTRE FOR ALTERNATIVE TECHNOLOGY

(See Access 1, EG22-3, page 86.)

ABC Radio **Science Show** reporter Robyn Williams visited NCAT at Machynlleth in Wales, interviewing the alternative technologists there on a range of subjects including solar and water power, organic gardening, etc. If you missed the program, a cassette tape is available for $4.95 from The Cashier, ABC Radio, Box 487, Sydney, NSW, 2001.

(Suggested by Ingrid Cheng.)

BOOKS BY MAIL

Self Sufficiency Supplies, PO Box 187, Toronto, NSW, 2283. Catalogue $1.00 (stamps preferred).

This wide ranging list of books, with brief reviews, covers energy, shelter, self-sufficiency, organic gardening and farming, livestock, cooking, craft and environment. It's very comprehensive (250 titles) and includes most books listed in Australian Access 1 & 2.

* * *

Compendium, PO Box 391, Milsons Point. Catalogue 2 x 20c stamps.

No longer at Darlinghurst, Sydney, but still putting out a mail order list which includes titles like *The Brick Book, Handmade Houses, Improvisations, Water for Every Farm,* Bob Young's updated *Build Your House of Earth,* also poetry and small press publications.

* * *

Publishers Distributors Pty Ltd, 104 Bowden Street, West Ryde, NSW, 2114. Write for catalogue.

The accent is on health books, with names like Paavo Airola, David Phillips, Herbert Shelton, Arnold Ehret, Ann Wigmore, Edmund Szekely and Adelle Davis among the authors noted, also Rodale Press titles.

They are very efficient and did a great job looking after *Earth Garden* mailing while we were away in 1979.

FRIENDS OF THE EARTH

Friends of the Earth Bookshop, 366 Smith Street, Collingwood, Victoria, 3066. Send 2 x 20c stamps for list of publications.

Books on the environment, energy alternatives, uranium, nuclear power and other general topics.

DONKEYS...

Donkey Digest, quarterly, $6.00 per year (foreign $A8.00) including postage, from the editor, Denice Moorhouse, 84 Pine Road, Mooroolbark, Victoria 3138.

This is a bright magazine, with lots of photos and stories for people devoted to donkeys. State membership of The Australian Donkey Breed Society includes the annual subscription.

CALENDARS

1980 Astrological Calendar

$2.00 posted from Thomas, Mt Cougal Road, West Burleigh, Qld, 4219.

A moon planting guide and calendar which includes all the information — how, why and when — for growing herbs and vegetables. An attractive buff poster.

Environment calendars (1980)

Tasmanian wilderness, $4.50 posted.

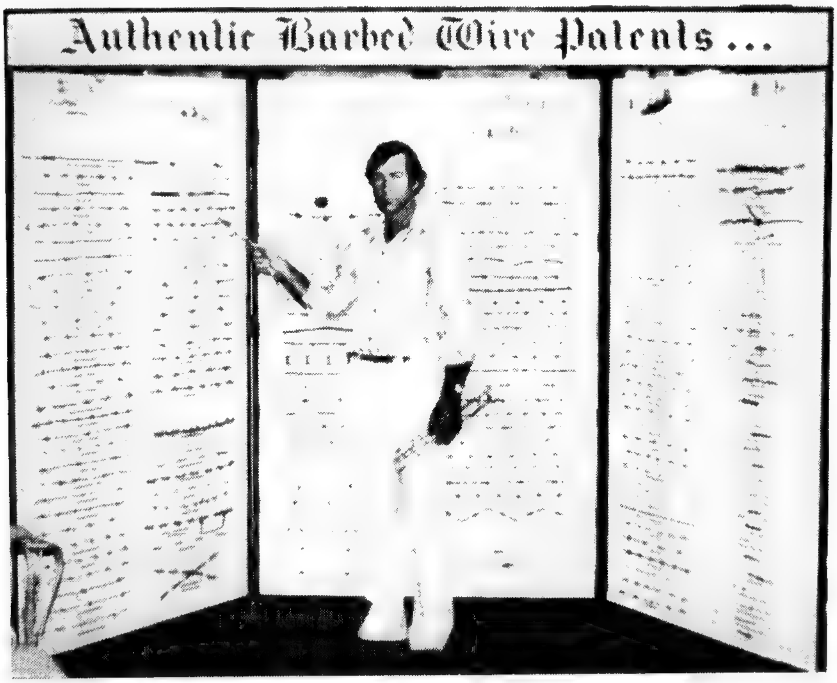
Australian mammals $2.20 posted.

From Friends of the Earth Bookshop, 366 Smith Street, Collingwood, Victoria, 3066.

GOATS...

Feeds and Feeding for Goats, now in its fifth edition, is a booklet prepared by The Northern Goat Club of Victoria for beginning goat keepers. It is $1.50 posted from either Raye Carter, Lot 61 Kinglake-St. Andrews Road, St. Andrews, Victoria 3761 or Gaille Abud, Flat Rock Rd, Hurstbridge, Victoria 3099.

This updates our listing in *Access 2* (EG25) on *goats*, which starts at page 183. N.G.C. membership is $3.00 per year (same addresses).


Authentic Barbed Wire Patents...

We've heard rumours of Texan millionaires flying to remote Queensland cattle stations to add a rare strand to their collection of barbed wire.

Now Rob Williams, an *Earth Garden* reader, is trying to promote interest in this fascinating hobby with displays and exhibitions of barbed wire throughout Western Australia.

Rob, who is one of the few serious collectors in Australia, is shown above with his display at Wagin 'Woolarama' in March last year.

"Wire is collected in 18 inch lengths and I have several hundred different types," says Rob.

If you share his interest, you can write to Rob at RMB 194a Boyup Brook, Western Australia, 6244.

more land lines

There is a good opportunity here on my 566 ha 20 year lease (renewable). There is a large area naturally irrigated by a swamp, mountain ridges and flats, seclusion and beautiful scenery, no improvements, power or telephone, yet only 20 minutes walk from the township of Innot Hot Springs, North Queensland. It must be good buying at $12,500.

Another thing of interest: I have an antique 1934 Chev. truck in original condition and fairly good order, needs new rings. For sale at only $600.00. It's an old beauty.

Write to Del Atkinson, Woodchopper Rd, c/- P.O. Charters Towers, Qld. 4820.

Exchange: level 810 square metre corner building block in Caboolture, town water, sewerage and electricity, close to schools, shops and rail, new houses around. Would like: a little acreage, suitable for building house and growing food. Prefer Queensland or Northern NSW, but would consider anywhere. All letters answered.

Please write: John Cowan, 20 Tichborne Crescent, Kooringal, Wagga, NSW, 2650. Phone: 22 5538.

We are a small vegetarian family interested in alternative lifestyles. We are seeking an abode to rent, or a positive community, perhaps in northern NSW or Queensland. We would love to hear from anyone with similar interests.

Peace and love, Martin and Glenda Goulding, C/- Post Office, Milang, SA, 5256.

Two gardeners — myself and my wife — would like to exchange some work in an organic garden or farm in the south of New Zealand for our board and lodging during the Christmas-New Year period of 1980-81. We are 62 years old, quite active, can get along with children and are quite willing to do any sort of work on the holding that is within our capabilities.

Please write to Norman W. Neal, 21 Fairfax Road, Warners Bay, NSW, Australia, 2282.

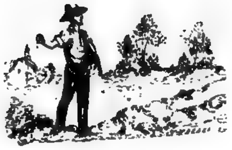
We are interested in buying 100-200 acres of land (not too expensive) in North Queensland, anywhere from Mackay, north.

Thanks, Laurie and Val Dimond, PO Greenvale, Qld, 4816.

Wanted to buy: Small acreage, plus home for me and three kids. Must have good rainfall and soil for largely vego subsistence living. Prefer to live amongst neighbours with similar ideas (perhaps on the north coast?).

Peta Higginson, 5 Trentwood Park, Avalon, NSW, 2187.

The E.G. Report



You are a university graduate, aged 36, with an income of $10,000 or more a year. You want to be self-sufficient, but you won't use chemical sprays on your food crops.

Who are you? Well, if you can believe this rough analysis of answers by 84 respondents, you are a typical *Earth Garden* reader.

This might come as a surpirse to many EG people, as it did to one of the editors, who received less formal education than 89% of the sample in our survey!. The survey, carried out in late 1978 by Ian Pausacker, author of *Recycling — Is it the Solution for Australia?,* asked our readers many serious questions in an attempt to learn more about the move towards self-sufficiency and the simple life.

It has the usual merits and drawbacks of all such surveys. For one thing, there was only a very small percentage reply to the survey (less than 1% of our readers). For another there is always the suspicion that these assessments are coloured because a certain type of person (certainly academics) is more likely to respond.

The replies were entirely voluntary and anonymous and make fascinating reading and will be full of interesting comparisons for people to make.

For our part, we are proud that so many *Earth Gardeners* are so strongly committed and serious in their pursuit of a better life.

The survey has also pointed up some areas where we can provide more helpful practical information, for example, in the care of fruit trees. We are already planning stories to fill this gap.

During 1979, more replies trickled in, but not enough for Ian to tackle the difficult task of incorporating these and updating his conclusions. He now has about 100 completed replies.

For a survey of this type to have a basis strong enough to use for research and background in the future, Ian will need many more replies. Please look up the questions in *Earth Garden 24* (Place), page 52 and send your views and comments. It will help us all.

Of the 84 respondents analysed here, 37% live in New South Wales, 37% in Victoria, 9% in Queensland, 8% in Western Australia, 5% in South Australia, 1% in Northern Territory and 3% (Ian was surprised at this low figure) in Tasmania.

SURVEY RESULTS

Food Production

74% of respondents grew *vegetables,* the average amount grown being 53%. Many mentioned their gardens being ruined by fowls, ducks, geese or neighbours' cows. Needless to say, they then commented on the need for good, animal-proof fences!

54% of respondents grew *fruit,* the average amount grown being 29% — but many mentioned young trees that were not yet bearing.

39% of respondents had chooks for *eggs*, producing an average of 92% of their egg needs.

26% produced some *meat* for home consumption, the average amount produced being 56% — but many mentioned they ate very little meat. Poultry was the main meat produced, with some beef and lamb and a little pork.

17% produced *milk* and of those the average amount was 68% of their milk needs.

Three respondents were trying *grain.* One grew 100% of corn requirements, a second stated 5% of grain grown and the third has just started growing grain and sunflowers.

The only other food produced was *honey* (3). One respondent mentioned total food costs of $10 per week for four people.

Preserving Food

63% of respondents bottled fruit or tomatoes; 39% froze food to preserve it, mainly vegetables, but some meat also.

36% made jam, pickles, sauces, or cordials.

23% had tried drying food (a relatively small percentage of the total). Those who had tried drying were experimenting with a variety of foodstuffs including sunflower seeds, herbs, mushrooms, peas, beans, bananas, apples, apricots and peaches.

Other methods of preserving included milk as cheese (3), a cool room for apples and pears (2), eggs, with vaseline or 'keepeg' (1), salting of beans (1) and citrus juice by the CSIRO method (1).

Animals

Fowls were the animal most commonly kept, 60% of respondents having some, with most keeping between five and 20. About half said fowls were kept only for eggs and the other half said 'eggs and meat'.

Reasons given for not eating poultry included "vegetarian", "can't bring ourselves to kill them although we do eat meat" and "tender-hearted husband".

Dogs were the next most popular animal, 37% of respondents mentioned keeping at least one dog (one person kept six dogs). Two mentioned that they must be well loved as their dogs killed their chooks.

Geese, ducks or *turkeys* were kept by 26% of respondents, and 24% kept *sheep,* the numbers ranging from one (for a 'lawn-mower') to 60 (a flock of black sheep for wool) and 400 (for the sale of fat lambs).

24% kept at least one *cow,* most having one or two, but one person had 15 and another 180 (a dairy farm). Cows were mainly kept for milk, plus meat or sale of calves.

Cats came next, 24% keeping at least one of these animals that, according to one respondent, are "destructive and useless".

Goats were kept by 19% of respondents, mainly one or two, though one respondent had eight, another 10, another 12 and one with 46. Goats were kept for a variety of purposes — scrub clearing, mohair, milk, meat and hides; with the majority being for milk.

Twelve of those surveyed kept *cattle,* the numbers kept ranging from one (for meat, plus keeping the grass down) to six ("to be trained as a bullock team") to 300 (beef cattle for sale). Finally, *horses* were kept by 10 respondents, *donkeys* by four (mainly as pets) and pigs by four (mainly for meat).

Use of Chemicals

Pesticides were used by 46% and 69% of these used only pyrethrum, derris dust, cleansel, Dipel or garlic spray (the so-called safe sprays). Other pesticides used include lebaycid (4), carbaryl (2), malathion, cabbage dust and tomato dust.

Some of the comments made include: *"no, we support large colonies of grubs and aphids", "the birds here pick out the vegies instead of the snails", "lose a lot of cauliflowers", "we are opposed to chemicals in principle", "definitely not", "we reckon it's cheaper to buy fruit than pesticides", "we mainly pick the bugs off by hand".*

Respondents have a dislike, a mistrust of chemicals, and many will go to almost any length — from hand picking, to losing much of their crop — to avoid its use.

It is relevant to note that those using sprays other than the 'safe' sprays were mainly those either trying to make a living from the land, or who had some horticultural training.

Fungicides were used by only 14 (18%). This needs to be considered in the light of only half the respondents growing fruit at all and many of those having young, non-bearing trees. Of those using fungicides, eight used Bordeaux, three sulphur and one each lime sulphur, copper oxychloride and mancozeb.

Weedicides were used by six respondents. Those mentioned were 24D, 245T, Atrezine, Gramoxone and Round-up. They were used either to get rid of blackberries, or control weeds in crops by those trying to make a living from the land.

Many mentioned the use of snail killer.

Companion planting was mentioned by some as a method of controlling pests and diseases, but only two gardeners actually claimed it had some effect.

The answer to this section is clear — the *Earth Garden* respondents have a dislike, a mistrust, of chemicals and many will go to almost any length — from hand-picking to losing much of their crop — to avoid its use.

Use of Machinery

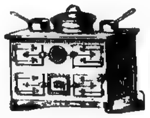
77% of respondents cultivated their garden/farm by hand, 24% using a rotary hoe and 22% using a tractor. The totals are greater than 100% as some used two methods.

One mentioned trying a horse and another *planned* to try a horse.

Petrol use: 45% of those with tractors or rotary hoes used less than 50 litres of petrol or diesel fuel per year, and only 24% used over 250 litres. While this might look good from a fossil fuel usage point of view, it also indicates a marked under-utilisation of the equipment. Some rotary hoes, for instance, consumed only 5 litres of petrol per year; ie, they were only used for a few hours.

Of the 61 respondents who gave a figure for total cultivated area, 35% cultivated less than 0.05 ha and only 21% cultivated more than 0.5 ha. Of those who did work more than 0.5 ha, most were in the range of 1 ha to 3 ha.

A surprising 18% of respondents were not connected to electricity.



Heating and Cooking

Room heating: a strong preference was shown for wood, with 52% of respondents stating they used wood for some or all of their room heating; 15% used electricity and 8% each oil, gas or kerosene; while 9% used no heating at all.

Hot water: 46% used electricity, 35% used wood (mainly via a slow combustion stove), 13% used gas, 2% used oil and only 4% had a solar hot water system.

However, many respondents said they intended to install a solar water heater or were "following breakthroughs and ideas on natural sources of power with interest."

Cooking: again a relatively high proportion (35%) used wood, 39% used electricity and only 26% used gas — probably mainly because many respondents are in country areas and many consider bottled gas inconvenient.

A surprising 18% of those replying were *not* connected to electricity.

Bread Baking, etc.

63% of respondents baked bread, at least sometimes. Comments ranged from "all", "every week" and "regularly" to "occassionally", "spasmodically", "when I have time", and "till baby born" and "tried — it always turns out too heavy".

71% Of respondents found time to do at least one handicraft — clothes making, weaving, spinning, pottery, etc.

50% serviced their own cars and three mentioned servicing friends' cars and those of relatives too. One person said "no money — have to".

83% were either building or improving their homes.

(Note that all figures apply to households, not individuals.)

Co-operative Ventures

Respondents haven't had a great deal of success with co-operatives.

17% had tried *food co-operatives.* Comments included: "at present in a difficult period", "not enough like-minded people about"; "tried twice. No go" and "not organised. Whenever it happens."

Machinery sharing had been tried by 29%. Comments included: "limited"; "tools only"; "with neighbour"; "half share"; "with two other families". One stated: "I don't like it as items have always been returned damaged.'"

Pooling of labour was tried by 26%, at least occasionally and mainly with neighbours.

Land sharing (apart from share farming) was mentioned by four respondents.

Households

The family was by far the most common group, with those who replied being from families with one child (20%); two children (25%); three children (4%). A man and woman living together (either married or unmarried) made up a further 18% of replies. The remaining 12% were either people living alone (2), two adults of the same sex together (2), three adults together (4), brother and sister (1) and a woman and her child (1).

Average age: the average age of all the adults living in the houses surveyed was 36 years.

Household Income

$0-$2000	5%
$2000-5000	12%
$5000-10,000	23%
$10,000-$20,000	47%
over $20,000	13%

Thus with over 60% of respondents having incomes over $10,000 and only 17% having incomes below $5000, we can conclude (without detailed analysis) that respondents were certainly not earning below-average incomes, and were probably significantly above average.

40% were "employees", 30% "professional", 14% "self employed", 7% lived from savings or investments, 7% were on the dole (not much more than the national average) and 2% were on social security benefits.

Their jobs were wide and varied: carpenter, cabinet maker, ambulance officer, lecturer, lawyer, service station attendant, bank officer, engineer, printer, nurse...(you name it).

Income from Produce

54% of respondents stated that they had derived *some* income from produce or handmade goods, but over half (55%) of these earned less than 1% of their total income this way. Comments made include: "negligible", "minute", "pocket money", "nominal", "insignificant" and "1 pig", "1 jumper".

24% earned between 1% and 10% of their income this way; 5% earned between 11% and 50% and only four respondents earned all their income from the sale of produce or handmade goods.

However, many people made comments like: "but intend this to become the major part";

"planning an exhibition of paintings and textile crafts";

"intend to start a small city-based organic market garden".

Clearly the *desire* to become financially self-sufficient existed among many respondents.

This is shown by the range of items they had sold: from eggs, cattle, pigs, vegetables and honey, to hides, wool, jam, herbs, mohair, handicrafts, nursery plants, wild mushrooms, fruit, hay, donkeys and dressed ducks.

Level of Education

The level of education was very high:

up to fifth form	17%
matriculation (HSC)	11%
technical course, nursing, apprenticeship, etc.	18%
graduate (university or CAE)	54%

Respondents living on Farms

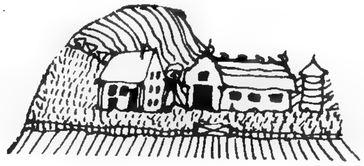
45 respondents (54%) lived on what they define as a farm.

> ***"You bet we plan to stay here. This is the ninth place we've lived in and this is it."***

When did they move there? Two-thirds moved within the past three years, and only six had been there before 1973. The overwhelming majority planned to stay, one replying:

"You bet we plan to stay here. This is the ninth place we've lived in and this is *it.*" Six respondents made comments like "probably", "a few years at least" and "till too old to work the farm".

Only six farmers definitely wanted to move; of these three wanted to move further out and three wanted to move to a bigger/better farm. *No-one* wanted to move back to the city.



Farm size: 31% of the farm respondents had 5 hectares or under, a further 32% had between 6 and 20 ha, 29% had between 21 and 100 ha and only 8% had over 100 ha.

Intended use

Twenty-six (58 per cent) farm respondents wanted to achieve self-sufficiency, including four who planned to have a "permaculture".

Twenty-one (47 per cent) wanted at least a significant part of their income from the farm, whereas the other 24 (53 per cent) planned to rely mainly on outside employment for their financial income.

Reasons for moving

Of the assorted reasons mentioned for moving to a farm, the main category was dissatisfaction with city living rather than a positive feeling about country living.

Thus 15 per cent of those replying mentioned that they were sick of suburbia, wanted to escape city pressures, to get out of the materialist rat-race, or wanted a better environment.

Eleven mentioned "spiritual" reasons, such as the need for space, fresh air and beautiful surroundings and the need to be away from people.

Four respondents mentioned *climate* as their reason for moving, either moving north to a warmer climate, or moving south to experience the four seasons. A further three were moving to obtain better (cheaper) farmland.

Nine farm respondents said their main reason for moving was because they wished for farm life and self-sufficiency.

Difficulties

The farm dwellers treated this section with much enthusiasm and frankness, sometimes writing *pages* on the problems they are experiencing. It came through loud and clear that they really are giving farm life a try — *and* finding that it is not easy.

Money: 26 farm respondents mentioned this as their major problem, including plain lack of it, the high cost of land, the need to obtain outside work and difficulties in finding work and the high cost of ideals (such as solar water heaters).

Comments made included:

"most income goes on capital goods"

"a small farm is a constant drain of time and money"

"financial — but you adjust"

Pests, etc: 21 farm people mentioned pests, drought, flood or weeds as major difficulties.

Lack of experience was mentioned by 12 farm respondents as a major problem, one stating firmly that "trial and error is not very satisfactory".

Water: either lack of water, or lack of storage, was mentioned by 12 respondents as a problem.

Location: 10 of those replying were concerned about the lack of access to their farm and/or the remoteness from people, shops and services.

Lack of time was mentioned by nine respondents as a major difficulty.

Personal adjustment was also mentioned by nine, whose comments included:

"Adjusting from a comfortable, well-equipped house close to shops and people, to a 'primitive' environment where weather plays an all-important part."

"Slowness of progress."

"Learning to accept setbacks. A sense of humour is indispensable."

"Getting used to plans being probabilities only."

"Adjusting to seeing each other 24 hours a day."

"Learning not to feel guilty if we don't achieve much some days, that there is no fixed goal and it *doesn't matter*."

"The continuous temptations of materialism."

"People (friends and family) don't accept our ideas. We are losing touch with a lot of old friends."

"So ingrained with the consumer society."

Climate: problems of adjusting to the climate were mentioned by five respondents.

Local friction was mentioned by four respondents, including: "there are very few people around here who like us so we often feel isolated and, in the town, quite strangers."

"Incredible hassles with the local council. Eventually just ignored them."

Other problems mentioned included poor fencing (3), lack of buildings, transport, drainage and the high cost of a telephone.

One reply stated: "Lots — but not insurmountable." Two others were concerned at the need to compromise:

"Having to work in the system (job) as well as live the alternate way."

"We originally hoped to do everything here without fossil fuels eventually. Now we doubt that we'll manage that until we have to or until we have time. We now have a pump, a tractor, and a chain saw as well as our vehicle — all using petrol."

Living in country towns

Nineteen respondents (23 per cent) lived in country towns. Nine of them had been there less than two years, a further six between two and four years and only five more than four years.

Reasons for moving

Comments included:

"For some peace and quiet and to do our own thing."

"Hated traffic in the city."

"Wanted space for a horse and goat."

"Less tension. People friendlier. Life less rushed. Fresh air."

"City too crowded, too much pace."

"Because of husband's job."

"To get away from relations."

"I would not go back (to Melbourne) for all the money in the world."

In contrast to those living on farms, who overwhelmingly wanted to stay there, those living in a country town seemed to regard it more as a stepping stone between the city and a farm.

Thus 12 out of the 19 country town respondents stated they were definitely considering moving to a country town within the next few years, three were uncertain and only four planned to stay where they were. No-one indicated any desire to return to the city. There wasn't, however, the sense of urgency to get to a farm that the city respondents mention later.

Comments included:

"When we have saved enough and have found the right one."

"One day — where no winter heating required."

"But we must wait until the children finish their education."

"But we would like to take improvements, eg, water, transport, gadgets, etc, with us."

"Whatever (farm) we buy we intend to own — no debts."

"I would not go back (to Melbourne) for all the money in the world."

Difficulties

Problems mentioned by country town dwellers included increased travel time/costs (4); neighbours being either "too close, too noisy", "standoffish", or "not like-minded"; confrontation on school or other issues; not enough money to "go ahead"; lack of suitable jobs, educational or cultural facilities; and poor soil, fencing or water supply.

Living in the city

They want to get out! Fourteen of the 17 respondents living in the city said they would like to move to a farm, and one would like to move to the outskirts of a country town. The comments made by the two who planned to remain in the city were:

"Would like to be more self-sufficient and moving soon (within Melbourne) to do it."

"Prefer to accept the challenge to stay in the city and change our lifestyle — if everybody moved to the country then the country would be no more."

Why move?

The comments made by the 17 city respondents speak for themselves:

"People (in the city) care only for brick houses and shiny cars."

"To make a better life for ourselves."

"We want the best of both worlds and why not?"

"Have this tremendous urge, a yearning, to return to the country."

"Fresh air, whole food, getting back what you put in, looking out to a hill and trees and not someone else's backyard or in our case bathroom and bedroom window."

"Less pollution, no rat-race and the chance to prove to ourselves we can build our own house and generally be proud of what we are doing and learning to do it ourselves."

"*Hate* living in a town."

"The city is no place to bring up children."

"Live life at a slower pace."

"Motivated by the feeling that I am doing something about decentralisation and decreasing energy consumption."

"We want the best of both worlds and why not?"

Other reasons given for wanting to leave the city included: "want to be self-sufficient"; "love growing things"; "hard work is fun and satisfying"; "would like our children to be aware of an alternate way of life"; and "convinced the present economic system has had it. Want to become immune to it by being self-sufficient."

Thus, there really is a planned *flight from the city.* The respondents are being driven out by what they see as poor living conditions or poor human values. Note that only three respondents mentioned a desire to grow food as their main reason for leaving the city.

Obstacles

Comments made by the city respondents included:

"Still have a 'security' hangup and will move only when we can buy land, build a mudbrick/rammed earth palace and still have $10,000 in reserve."

"Lack of suitable land or high prices" (7).

"I feel the problems of self-sufficiency in a semi-arid environment have not yet really been solved."

"Want financial security and can see no reason to make a move to a subsistence life of just hard grind and nothing else."

"Cash outlay for land, dwelling, tools, then continuing costs — rates, car registration, etc. These expenses seem to make self-sufficiency impossible."

"Young son finishing carpentry apprenticeship."

"Difficulty of obtaining part-time work."

"Must save a considerable amount and also gain knowledge about various methods and ideas in self-sufficiency before moving."

Conclusions

It is tempting to start drawing a picture from these results of a *"typical Earth Gardener"*. But, of course, I can't. All I can say is that the 84 people who replied certainly had a story to tell. Many people sent long letters — 12 pages or more. Coming through strongly in most letters (particularly those from people on farms) was courage and determination, for example:

"This year was the hardest so far but I've not laughed so much since I was a kid."

And also pleasure and relief at being able to speak out and tell others about their experiences:

"Thanks for the opportunity to take part in the first survey we have. That you exist is gratifying."

Many thanks to the 84 respondents for taking the time to answer the questionnaire — their enthusiasm was inspiring. However, they represent less than one per cent of *Earth Garden* readers, so we can't yet use the results to say to governments: "Look, the back-to-the-land movement exists, is worthwhile, our problems are these and we want this."

So how about lots more replies? Look up *Earth Garden 24* (PLACE) issue (page 52), show it to your friends and take time to send a reply (PO Box 176, Monbulk, Victoria, 3793) and help build up a definite picture of your aspirations, hopes — and problems.

Best wishes,
Ian Pausacker

EARTH GARDEN 27

Plants we eat!

Edible plants will be the main topic of EG27, out in May. We hope to build up a resource section, with brief articles on plants such as persimmons, winged beans, tamarillos, tropical fruit and native plants like the Bunya Bunya nut.

We would love to hear from you with your own notes, hints, stories or contacts on growing plants and preparing them for eating. Copy deadline is March 15.

Other articles will include biological controls, making cider, access, land lines, with more on owner-building and solar electrics.

The anonymous owner of this waterless compost toilet calls it a "waste-not what-not". It is owner-built and has been put through a year's successful trial in its setting in the scrub.

Though reluctant to seek council and health disapproval, he says the idea works well and must rank high in terms of cleanliness and efficiency when compared with any other Australian dunny.

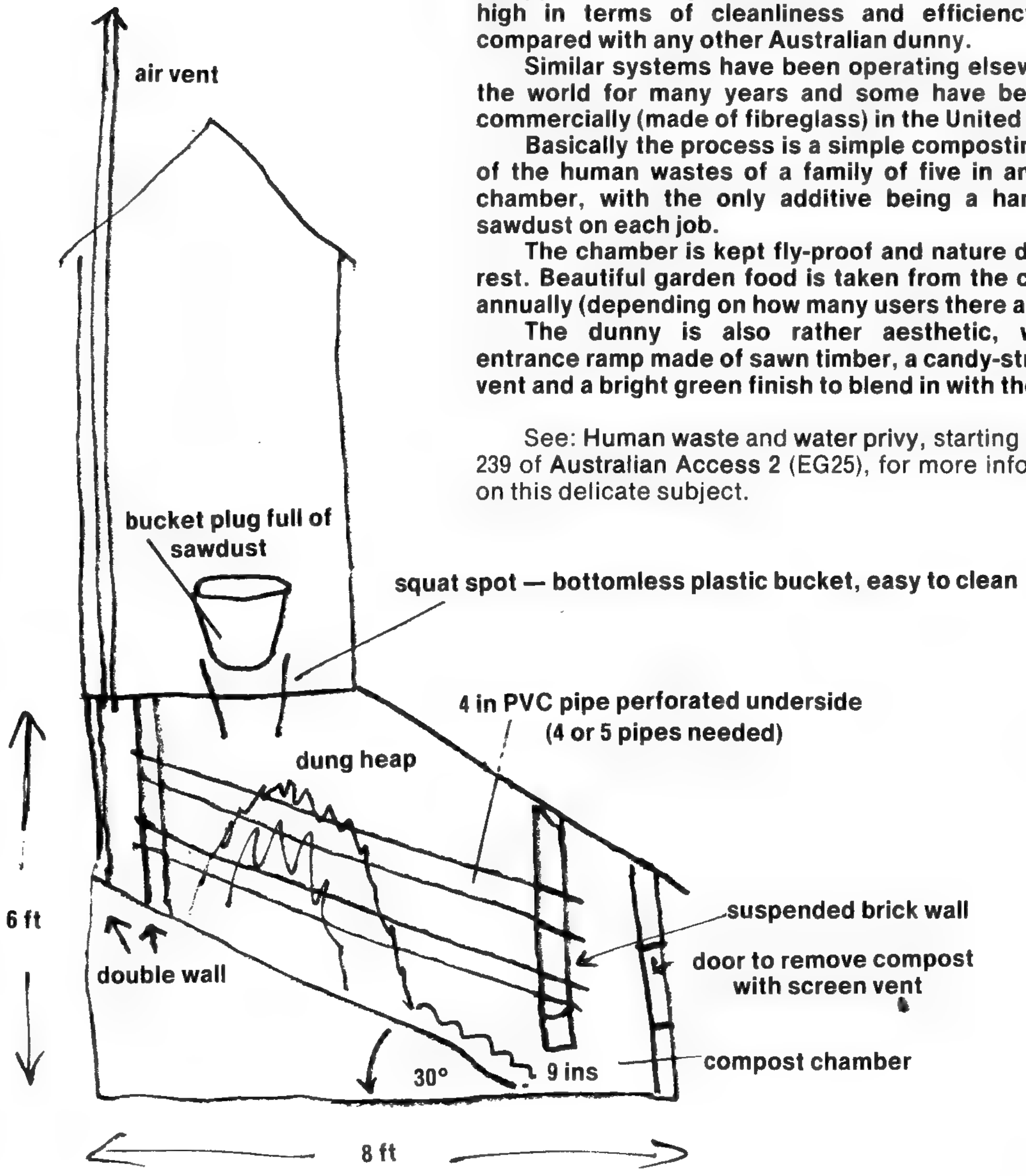
Similar systems have been operating elsewhere in the world for many years and some have been sold commercially (made of fibreglass) in the United States.

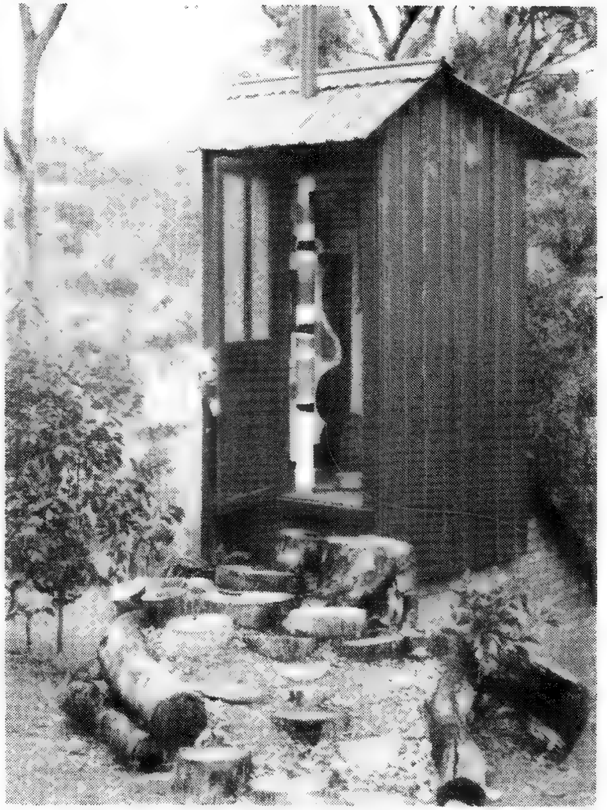
Basically the process is a simple composting down of the human wastes of a family of five in an air-fed chamber, with the only additive being a handful of sawdust on each job.

The chamber is kept fly-proof and nature does the rest. Beautiful garden food is taken from the compost annually (depending on how many users there are).

The dunny is also rather aesthetic, with an entrance ramp made of sawn timber, a candy-striped air vent and a bright green finish to blend in with the bush.

See: Human waste and water privy, starting on page 239 of Australian Access 2 (EG25), for more information on this delicate subject.


air vent
bucket plug full of sawdust
squat spot — bottomless plastic bucket, easy to clean
4 in PVC pipe perforated underside
(4 or 5 pipes needed)
dung heap
suspended brick wall
door to remove compost with screen vent
compost chamber
double wall
30°
9 ins
6 ft
8 ft



more land lines

We are in the process of selling our land in the Barossa Valley and would like to purchase some land, about 60 acres or more, either in NSW or Queensland. Ideally, it would be fenced, have permanent water, a small house and electricity. We would be interested in buying in to a small community of, say, one or two couples. I am experienced with fencing, sheep and windmills. We are non-vegetarians and like to smoke cigarettes, but are not into drugs or religion. Our ages are 28, 26, 3½ and one on the way.

Please contact Peter & Jo Mills, Stockwell, SA, 5350. Phone: (085) 62 2563.

We have a nice block of land, 25 acres, available for any *Earth Garden* readers who would like to make the break from city to country.

We live here in a very healthy climate, 68 inches of rain a year, nice view, 90% cleared and fully fenced, divided into paddocks with a new dam, suitable for market garden or orchard, 10km from town and school, good road. Electricity and phone available. Property is ½ mile from Myall River and close to the Myall Lakes. Price $16,000. At the moment the land is used for grazing.

Paul Hinderer, 22 Myall River Road, Bulahdelah, NSW, 2423.

I am looking for a place to live in the country, particularly with someone who is building their own house and is willing to teach me how to build, also other aspects of farm life, for example, poultry, cows, goats, gardens and orchards. I was raised in the city, but prefer the country. I am 23, unemployed and not afraid of work. I would like to work in exchange for food and 'live-in'.

Robert Charles, MS 1406 Morayfield Rd, Morayfield, Qld, 4506.

Another family (preferably with children) needed for our EG style 106 acres in south-west of Western Australia. We're into dairy goats and eventually nut trees, so would like someone with similar quirks. Hope to establish our own school (have four children, 6, 4, 1½ and 2 months) and creative centre. Natural rearing — no drugs or alcohol wanted.

Write for details to Charli & Blue Hale, RMB 253, Osmington, WA, 6285.

Northern NSW, land for sale, ¼ share in 90 acres, includes cleared and forest areas, creek, dam, and electricity. Accommodation available. $10,000.

Contact: Annette McDonald, C/- Post Office, Uki, NSW, 2484.

CINVA RAM

In my garage is an unused Cinva-Ram complete with inserts. They retail at $420.50. I am not going to be able to use it for a long time ahead, if ever, to my sorrow. Anyone who wants it can have it for $310 if they write ahead to arrange collection, since I spend some time out of the State each year.

M. J. Lear, 35 Cavanaugh Street, Wynnum West, Qld, 4178.

For sale: 50 acres partly cleared land with some good timber, permanent creek, two dams, electricity runs through property, phone available, 14 miles south of Kempsey, handy to Port Macquarie and beaches. School bus at highway. $12,000.

Contact Mrs M. Pattrick, C/- Post Office, Kundabung, NSW, 2440.

We have a beautiful valley, with undulating country originally all dairy farm, now in 40 acre survival blocks, with electricity, phone available, permanent creeks or dams in each block. Good gravel road access and we are 25 miles north of Gympie or 120 miles north of Brisbane. We are asking $13,500 to $17,500 for the blocks and can help with finance.

Please write: Howard and Marilyn Hall, C/ Chris and Anne Cole, 'Bambara', Anderleigh, via Gympie, Qld, 4570, or Phone: (071) 86 5288.

For sale: Small eat in-take away wholefoods shop in Maclean, NSW, (between Grafton and Ballina). Open weekdays, 9am-5pm. Urgent sale — cheap.

Please contact Nik or Roy, "The Good Food Shop", 2/18 River Street, Maclean, NSW, 2463. Phone messages (066) 45 2655 soon!

Avocados, paw-paws, bananas, mangoes, peach and citrus, all bearing on this delightful 4.5 hectares near Gympie. Also numerous young fruit and nut trees, plus 40 lychee and 50 avocado, planted last year. Small three bedroom timber house has pot-belly stove, carpet and lino throughout, phone, electricity and septic. There's a chook run, large machinery shed and organic vegetable garden. $31,000 includes tractor and trickle and spray irrigation, diesel pump for creek water. Lots of natural bush, tree ferns and palms near the creek.

Danni and Stuart Mackenzie, 4 Ryan Road, Wolvi, Qld, 4570. Phone (071) 86 7281.

Rural retreat: 80 acres of virgin bush, abundant wild life, ideal site for secluded log cabin. Western Darling Downs, Queensland. Freehold, $12,000.

Please write: Tony Rosoman, 1/41 Chermside Street, Newstead, Brisbane, Qld, 4006.

For sale: half share in 130 acres in northern NSW. Head of the valley, permanent creek frontage, frost free, 40 acres cleared, rest open forest or regrowth trees, 4WD access, high rainfall, $11,000 ono.

For further details write to Andrew Morton, Upper Horseshoe Creek, via Kyogle, NSW, 2474.

I am in my early forties, tradesman, non-religious, non-fanatical and very much an outdoor person. My main interest lies in organic gardening and growing fruit and nuts. My ambition is to visit various co-ops in NSW and Victoria and perhaps join or buy into land with such a group of people, those who are active and strive for self-sufficiency. Love to hear from you soon.

Gunter Ackermann, 34 Wagga Street, Farrer, ACT, 2607.

We are Mike and Maureen, with children Rachel and Aaron. We have a beautiful farm of 89 acres and are offering 25 acres of it to some good people for $8000. The land is half cleared, runs onto the Macleay River where there is a ridge with regrowth. The land then slopes down to the dam which is surrounded by good growing soil. Power is available.

Ring or write to Mike and Maureen Corden, 'Nainia', Temagog, via Kempsey, NSW, 2440. Phone: (065) 61 7119.

I am seeking a piece of land in north-east NSW suitable for growing avocados. The size is preferabley in the 10-20 hectare range, but I am open to any proposition.

Love and light, Bob Coe, 4 Raynor Pl., Baulkham Hills, NSW, 2153.

For sale: 44 acres, 4000 feet above sea level, 8 miles above Nundle and about 38 miles south east of Tamworth — 90 per cent of this land is covered with large trees and tree ferns. It has two small creeks, good access, power and phone available. There are a number of covenants on the land designed to protect the fauna and flora. Price $12,000.

Dennis and Wendy Burt, Alison Road, Dungog, NSW, 2420. Phone: (049) 92 1902.

A group of us hope to get land in north eastern Victoria, possibly on the Buffalo River or nearby. we are also seeking contacts in getting started and established. Our income and savings are limited.

Patricia Dunn, C/- Lot 10, Homestead Road, Orchard Hills, NSW, 2750.

Wanted: 10 to 100 hectares within three hours of Cairns, Queensland. Undulating natural land without noxious weeds, not less than 300 metres above sea-level, with permanent flowing creek suitable for a small hydro-generator — and a good swimming hole. Preferably fenced, with north-eastern aspect and all year vehicle access. Existing house, sheds, yard an asset. No mains power or water required; definitely not in commercial farming area which is subject to chemical spraying. Local primary school an advantage. To $40,000.

Paul and Kerry Condon, PO 239, Cairns, Qld, 4870.

We are looking for someone who knows about blacksmithing; not just horse-shoeing, but with the knowledge of working with iron and producing items useful at home and pleasant to the eye. We would like to set up a small workshop for the person who could live here and work for himself with our tools, but in return must be willing to part with some of his knowledge and experience and teach an old man of 58 something of his craft.

He may be someone of any age, race or belief, as long as he is clean in mind and body. Please write to us if you are interested.

Sigmund Diczbalis, C/- PO Tathra, NSW, 2550.

In mid-1980 we intend moving to an 80 acre property (very beautiful) in northern NSW near Murwillumbah, where we can be relatively self-sufficient or at least independent of the more rapacious commercialism of this society.

We are seeking two partners who would: 1. be prepared to invest $10,000-$12,000; 2. be prepared to work the land sympathetically to produce a moderate income; 3. be prepared to work towards alternate power sources and a permaculture; 4. contribute both physical work and intelligence; 5. provide some stimulating, interesting, challenging and amusing social contact.

Ralph and Brenda Blunden, 43A Cowles Road, Mosman, NSW, 2088. Phone 960 3646.

We are looking for land of 10 to 16 ha with a good water supply in Queensland or northern NSW. We are prepared to share with others in purchasing a larger property.

Thank you, Tom Fryer, 8/15 Orleigh Street, Hill End, Brisbane, Qld, 4101.

We are looking for land in Victoria or NSW; not flat country and not too far from the ocean, mostly uncleared, 20 acres minimum. Prefer land without a house.

Thank you, Jenny and Steve Jansen, Flat 2/168 Warrigal Road, Burwood, Victoria, 3125.

We, Eva, Rainer and David (5) have 190 acres with house near Nimbin and plan to establish a loving community. We hope to achieve closeness and wholeness through shared learning and therapy (primal, bio-energetics, Bhagwan meditation) 'liberating' our feelings and sexuality, combining spirituality with political awareness. Shares cost $2000 (part payment possible).

Contact: Rainer Taeni, Yulunga Co., Barkers Vale, via Nimbin, NSW, 2484.

When you buy your van in London, mosey on down to Cornwall for a bit of Aussie organic permaculture-hospitality. This alternative gentleman is seeking a self-sufficiency friend for exploring simple lifestyles on Cornish (UK) smallholding, including Ecologistics (see book reviews).

Patrick Howden, "Clovelly", Mt Hawke, Truro, Cornwall, United Kingdom.

We are looking for a place to live off the land self-sufficiently in exchange for work. We are a young, peaceful couple of practicing Christians and vegetarians, Michael (23) and Vicky (21). We don't believe in drugs or in any of the promiscuous society of today. We do believe in the coming crisis.

We have a van to live in and we hope to join peaceful people like ourselves. We will help in any work. We feel right in Queensland or NSW (north) and would like to communicate with anyone who can help us, or those who search like us.

Sincerely, Vicky and Michael Hourigan, 10 Lynton Street, Mt. Gravatt, Brisbane, Qld, 4122.

We are two middle-aged people who would like to move to northern Queensland to the Atherton Tablelands, with the possibility of growing and marketing herbs and spices of which we have considerable knowledge and sales outlets.

Since we haven't the necessary finance at the moment to purchase property, we would be looking for a longterm lease, with a small house and acreage to rent to commence with.

Please write to Bronwyn Hancock, c/- 13 Arthur St, Medindie, SA 5081.

I own 174 acres of tropical paradise, with 100 acres cultivable and four permanent running creeks. The balance is rainforest abounding with wallabies and cassowaries. I am establishing a tropical fruit farm and nursery, plus grazing and I need people who are prepared to work with me to realise this dream, on a share basis. Capital or experience are not necessary, but a love of nature is essential.

Reply: R. H. Jones, 7 Carrier Rd, Wangan, via Innisfail Qld 4860.

House to share: large country farmhouse in north-east Victoria near Wangaratta to share with two others. Garden, house cow, etc. Only suitable for people keenly interested in self-sufficiency. Chris, R.M.B. 9875, Wangaratta, Victoria, 3678.

Tranquility on 72 ha (180 acres) near Nerriga, NSW. Frontage to Nowra-Braidwood Road and a permanent creek. Land comprises some unimproved pasture, hardwood forest and a small gravel deposit. A building permit is available and the Shoalhaven River and Budawang Mountains are close by. Price negotiable around $12,000.

Write for photos and further details to John Williams, 11 Eady Street, Dickson, ACT 2602

For sale: 603 acre farm, farmed organically for 12 years. Frontage to Murray River on Victoria-NSW border, 20 miles from Echuca. Suitable sub-division into 100 acre blocks of $50,000 each. As whole, with good homestead, buildings, $200,000 or near offer.

George Petrowsky, R.M.B. 77, Moama, NSW 2739

For sale: Hilly land, tall trees and natural scrub, 40 acres, but not suitable for agriculture. Plenty of fresh water. Good home site on hill, needs ingenuity to build access. Mangrove Creek runs by one corner. About 1½ hour drive north of Sydney. Price $11,000.

Please write to Yvonne Jones, 1 Crowley Road, Berowra, NSW 2081.

Springlands Farm is situated 20 km west of Launceston, Tasmania and consists of a large restored farmhouse and 106 acres of poor quality land as well as numerous sheds and outbuildings.

Our intention is to find one, or two, people with the necessary skills to establish craft workshops on the farm. The farm is owned by a unit trust, so no financial outlay is required, although those interested would be expected to support themselves, at least in the initial stages. The right people will hopefully be Christian and prepared to look at the project as at least a one year commitment.

Please write to Maurice Wren, Springlands Farm, Hadspen P.O.Tasmania 7257.

Practical people (two persons or two family units) needed to take interest in north-eastern NSW farm, a mixed farm, with many options. Self-sufficiency is our aim. Small acreages may be leased if and when agreement is reached with all parties. There is 1,000 acres, half of which is to be turned over to resettlement. Some scrub soil, creek through property, areas suitable for small cropping or orcharding.

Enquires to Will & Margaret Banks, Afterlee, via Kyogle, NSW 2474.

E.G. lives!

> **Why, people who previously seemed perfectly sane and happy consumers are prone to catch this insidious earth type of derisive laughter after reading *Earth Garden,* and soon they are rubbishing their respectable triple-fronted brick veneers, talking out of the corner of their mouths round the raw carrot they sport instead of a decent excise paying cigarette, and soon they rush off and build themselves non-professional homes out of — mud!**
>
> **. . . Its incredible circulation in a place like Australia makes it easily the most read journal produced by any greenie organisation here, making a new greenie any minute.**
>
> **NEIL DOUGLAS, *Australian Book Review,* December 1978.**

EG lives! That "persistent periodical" *Earth Garden* is back in print after a year's rest. Hello again to our friends and valued readers and to old and new settlers everywhere.

If you are reading these pages for the first time, we would like to tell you something about ourselves. *Earth Garden* is a friendly forum for people who are interested in self-sufficiency, a subject which was considered quite *odd* when we began back in 1972.

We have survived for eight years as possibly the only "little" journal in Australia which does not get a grant, has no well-heeled sponsor and runs no advertisements. This way we are not influenced by any vested interests.

Probably this is because we are a 'two-person' magazine. We put EG together from start to finish, writing and editing articles, pasting up copy, laying out pages, writing letters, sending accounts, wrapping parcels, mailing them and delivering to bookshops. We do everything except the actual printing — the machines do that better! EG is our life, and a very full one, at that.

We found a large audience for the outlook we were pioneering. They wanted practical, 'feet-on-the-ground' information on subjects like keeping small animals, organic growing, building their homes in stone or mudbricks, natural foods and alternative energy.

Our previous 25 issues have included a lot of material that does not appear in other publications and many topics which were before their time — like organic gardening in 1972, solar and wind power in 1973 and 'alternatives to petrol' in 1974.

These back issues have now built up into a valuable resource file, totalling 1600 ad-free pages. They include our bumper *Access* issues (EG22-3 and 25), which are sourcebooks of human-scale methods for providing the essentials of life with plans, books, tools and techniques for the post-oil age.

EG1 to EG25 (1972 to1979) is still available, but it is no longer economic for us to keep reprinting back issues. This means our current stock will be the last, so we suggest you order full sets now, or write to fill in any missing issues while you can.

That 2.8kg "big packet" that arrives in your letter box may change your life. We hope it will be a useful guide through these difficult times.

Our three EG books are in stock: *The First EG Book* (best of EG1-EG10) and *Second EG Book* (best of EG11-EG20) each of 256 pages, are now $8.50 each posted. Keith's lavish *Illustrated Earth Garden Herbal* is $9.50 posted ("a handsome book, very good value for money", said *The Irish Times,* Dublin).

EARTH GARDEN, PO Box 378, Epping, NSW, Australia, 2121

Prices — includes postage

Single issues:	EG1-EG10 — $1.25 each	$.................
	EG11-EG14 — $1.45 each	$.................
	EG15 & EG16 — $2.00 each	$.................
	EG17-EG21 — $1.80 each	$.................
Access 1 & 2:	EG22-3 & EG25 — $3.50 each	$.................
	EG24 (Place) — $1.80	$.................
1980:	EG26 — $2.25	$.................
	EG27 (May) — $2.25	$.................
Sets:	EG1-EG25 — $37.50	$.................
	EG1-EG27 — $42.00	$.................
The First EG Book (best of EG1-EG10) — $8.50		$.................
The Second EG Book (best of EG11-EG20) — $8.50		$.................
The Illustrated EG Herbal — $9.50		$.................
	Total enclosed	$.................

Name ....

Address ....

.... Postcode ....

(Note: EG22-3 is a single volume, double issue)
Foreign, add 10 cents per copy for seamail postage

EG1: MOVE OUT ... HANS POULSEN ... KIBBUTZ ... MOSHAV ... FOOD CO-OP ... ACCESS KEY ... MONTSALVAT ... EARTHWORMS ... FRED ROBINSON ... HERBS ... BEAN SPROUTS.

EG2: ORGANIC FARM ... START A GARDEN ... NEIL DOUGLAS ON THE ART OF GARDENING ... P. A. YEOMAN'S KEYLINE SYSTEM ... KIEWA FARMS ... DRYING FOOD.

EG3: HERBS ... COMPOSTING ... ALL ABOUT GOATS ... COMPANION PLANTS ... MUDBRICKS WITH ABBIE AND NEIL ... DOMES ... WATERWHEEL ... BREAD ... POTTERY ... SPINNING .

EG4: A PLEASANT TREATISE ON THE HONEY BEE ... BACK TO THE LAND IN TASMANIA ... THE TRANSITION ... ENZYMES ... BLACK SHEEP ... CANDLES ... HOME TANNING ... DONKEYS.

EG5: WIND ISSUE — WINDMILLS ... WINDPUMPS ... GENERATORS ... RAKU ... CINVA-RAM ... TOOLS ... POULTRY ... THE VEGAN WAY ... MOON PLANTING ... JUST NINE ACRES.

EG6. SOLAR 1 — SOLAR COOKER ... SUNDIALS ... SUN SCIENCE ... THE LOST WORLD ... CONCRETE HOUSE ... SHALOM ... CAJUN COOKIN' ... SPIRIT OF NIMBIN ... CLIFF PUGH ... GONDWANALAND.

EG7: SOLAR 2 — SOLAR HOT WATER IDEAS AND SOURCES ... GOOD COMPANY ... FLIGHT FROM THE CITY ... ANGORA GOATS ... MAKE A LEATHER BAG AND BELT ... MUDBRICKS AGAIN.

EG8: GAS POWER — METHANE DIGESTER ... POWER FROM THE PIG PEN ... BY TRUCK TO TASSIE ... ¾ ACRE ... CUMBUNGI HATS ... HARMONY FARM ... TAPERS ... INKLE LOOM ... COTTAGES ... A-FRAME.

EG9: ALTERNATIVES TO PETROL ... LPG GAS ... MARY'S PLACE ... STONE RUBBLE BUILDING ... MACROBIOTICS ... OATS ... DUCKS ... HORSE AND CART ... A RUG FRAME ... ORGANIC FARMING ... HOW TO KILL A PIG ...

EG10: A GRANITE HOUSE ... BAMBOO FLUTES ... GEESE ... CHIP WATER HEATER ... MAKE BEEHIVES ... NODDY'S DOME ... MUDBRICKS YET AGAIN ... JARRAH SHINGLES ... BIO-DYNAMICS ... A TANDEM ... INDEX.

EG11: WATER ISSUE — HYDRAULIC RAM ... WATER WHEELS ... A MILLER'S TALE ... SEED PRIMER ... HEAVY HORSES ... OKRA ... TOMATOES ... START WITH HENS ... WINE ... HARD CHEESE.

EG12: KEEPING FOOD — DRYING ... SALTING ... BOTTLING ... STORING ... TAHU ... TOBACCO ... PLANT PROPAGATION ... GARLIC SPRAY ... PLANS FOR A SOLAR WATER HEATER (PART 1) ... SOLAR STILL ... SOLAR COOKER.

EG13: THE BUSH — MEN WITH AXES ... WOODCHIPS ... NATIVE GARDEN ... FLORA AND FAUNA ... NATIONAL PARKS ... WILD PLACES ... WILD LIFE ... BUSHCRAFT ... SOLAR HOT WATER PLANS (PART 2).

EG14: SELF-SUFFICIENCY — GARDENS FOR ALL ... BOTOBOLAR GRAPES ... ABIGAIL'S GOATS ... MILLET ... CRUSOE ... THOREAU ... HELEN AND SCOTT NEARING ... WE BUILT IN STONE ... HEALTHY SOIL.

EG15: A LYTEL HERBAL — GROWING AND USING HERBS WITH TEXT AND ILLUSTRATIONS FROM THE CLASSIC 16TH CENTURY HERBALS, WITH MODERN COMMENTARY ... COMPANION HERBS.

EG16: LYTEL HERBAL (PART II) — PLUS PEOPLE AND THE LAND ... MOORA MOORA ... POULTRY SHED ... PEAFOWL ... GOAT NOTES ... BASIC BEEKEEPING ... PIONEER PISE ... MIRACLE PUMP ... COMFREY.

EG17: ALL ABOUT FENCING ... DRY STONE WALLS ... DUCKS ... NETS ... MAKE SOAP ... THE AUTONOMOUS HOUSE ... POLE SHELTER ... PISE IN DARWIN ... BREEDING BLACK SHEEP ... ASPARAGUS.

EG18: FRUIT — ORANGES ... LEMONS ... CITRUS ... OLIVES ... NUTS ... TROPICAL FRUIT ... FODDER TREES ... BIRDS AND INSECTS ... BUILD A ROAD ... HOME BIRTH ... CINVA-RAM HOME ... WOOD-FIRED KILN.

EG19: WOOD HEAT — POT-BELLY STOVES ... JOTUL ... COOKERY ... MAKING A QUID ... BUILD A STORAGE CELLAR ... EARTHLY DELIGHTS ... ACCESS ... BUSHFIRES ... SUNRISE FARM ... STONE FRUIT ... MACADAMIAS.

EG20: APPLES ... PEARS ... CORDON AND ESPALIER ... AVOCADO ... THE ZOLINS ... POLLEN ... BUILD A HAYBALE PIG HOUSE ... LOVE YOUR COW ... ROSE HIPS ... MUDBRICK FLATS ... ELECTRIC GENERATORS ... SOLAR HOMES ...

EG21: WOMANCRAFT — ALL ARTICLES BY WOMEN ... EARTHLY ARTS ... PUPPETS ... AXEWOMANSHIP ... SPIN AND WEAVE ... RUGS ... OLD ROSES ... MUDDY BUILDING ... SUMATRAN HOUSE ... THE GROUP ... INDEX TO EG10 TO 20.

EG22/23: AUSTRALIAN ACCESS 150 PAGE SOURCE BOOK — ABORIGINES ... ORGANIC GROWING ... PERMACULTURE ... BILL MOLLISON ... WIND ... SOLAR ... WATER POWER ... SOLAR CELLS ... WITH ACCESS TO GROUPS, BOOKS, TOOLS AND TECHNIQUES ... WATER SUPPLY ... BUCKET PUMP (DOUBLE ISSUE).

EG24: PLACE — 24 GROUPS AND NEW SETTLERS SHARE THEIR "PLACE" OUTSIDE THE CITIES. INCLUDES MARE CARTER, RON EDWARDS, NEIL DOUGLAS ... GUNDAROO STORE ... THE OASIS ... RAINBOW REGION ... UNIVERSAL BROTHERHOOD ... MT OAK ... MOORA MOORA ... BUSH ASHRAM.

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